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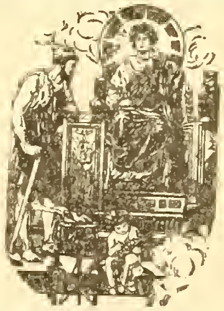

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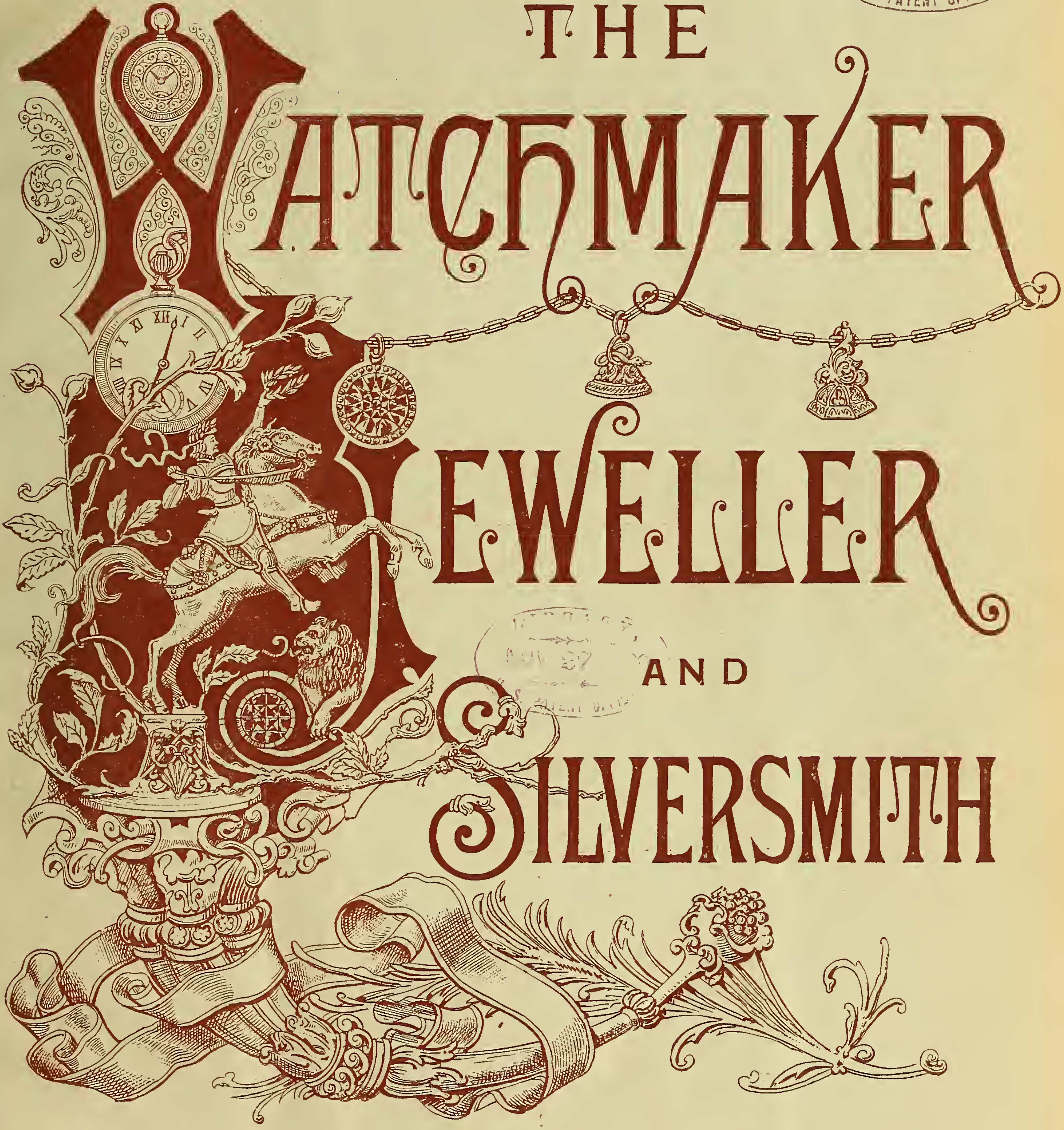

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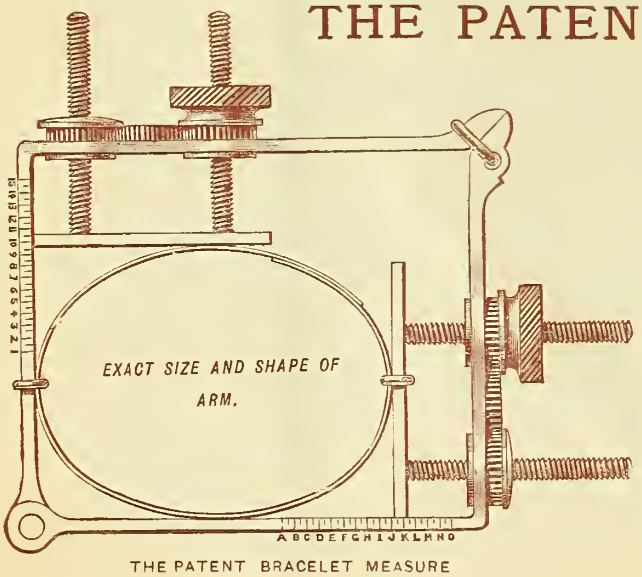

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The
Watchmaker, Jeweller & Silversmith.

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The Watchmaker, Jeweller and Silversmith.

A Monthly Journal devoted to the interests of Watchmakers, Jewellers, Silversmiths and kindred traders.

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Editorial.

UNDER the heading "How they treat the Watch Jobbers in America" our little Coventry contemporary the "*English Watchmaker*" publishes an extract from the report of a meeting of the "National Association of Jobbers in American Watches."

From the heading of the paragraph in question, we infer that the English editor has fallen into the not altogether inexcusable error of confounding the sense in which the term "Watch-jobber" is employed in the two countries. We know the American trade do not generally "Catch on" to the term as it is technically used here (viz.: to describe a repairer of watches), and it may not be altogether out of place to give the American meaning, as defined by a leading delegate (Mr. David Keller), of the association referred to at a subsequent meeting to the one from the report of which the extract is taken. In speaking of the position of the modern watch manufacturer, Mr. Keller says:—"He (the manufacturer) has also come to the conclusion that a large manufacturer's interests can be better served by distributing his goods through commission merchants, as by this means he is enabled to distribute his goods quickly, and advertise them in the remotest corner of this great country—*and that commission merchant we are pleased to call the jobber.*"

From further remarks in Mr. Keller's address, we gather that the formation of the American Jobbers' Association was the outcome of the necessity for an organisation on rational principles, in so large a country as the United States, for the prevention of a cut-throat competition, the regulation of prices, profits, &c., and the maintenance of a standard quality of the goods produced. There are at present 220 members of the association.

Obituary:—We regret to announce the loss of a valued, though occasional correspondent, Mr. Hermann Bush, of 125, Hessle Road, Hull. Mr. Bush, whose death took place on the 30th of May last, was well known to the trade as a jewellers' supply agent, and to all readers of horological trade literature. He was in his 58th year.

General Notes.

We remind our readers that the Annual Trial of Chronometers at Greenwich Observatory begins on the 7th instant, and no chronometer can be received at the Observatory later than Monday, the 2nd instant.

It will be news to some of our readers to hear that, notwithstanding the universality of keyless watches, and consequently, of the going-barrel, Mr. Hewitt is still turning out from his Prescot manufactory an average of two gross of key-winding full-plate fusee movements a week.

In a note in our recently published Colonial edition, describing the presentation by the students of the Horological Class of the Coventry Technical Institute, of a photograph of the class to Mr. David Spencer, we put the teacher's name as Joseph Player; it should have been written J. W. Player.

Bully for you!—An American paper says, that papers for individual trades are to be the Journals of the future in bringing under the notice of retailers the goods that are manufactured and sold for the respective trades. The wholesaler who advertises in daily papers, either wilfully throws his money away, or is trying to do a trade independent of the recognised dealer.

On the afternoon of the 11th ulto., a man entered the shop of Mr. Richardson, jeweller, Hume Street, Stockton, and took a silver watch from the counter. The assistant saw him and fastened the door, when the fellow deliberately sprang through the window and made off. He is said to be well-known to the police, who expect to arrest him shortly.

The design of Mr. Charles Irwin, architect, of St. Kilda, New South Wales, has been accepted for the proposed Colonial gift to the Prince and Princess of Wales. The design comprises two large flagons and a drinking cup, the whole embossed and inlaid with precious stones. The enrichments and carvings represent various phases of the animal life of the colony. About 450 oz. of silver were required in the manufacture. The fund to date amounts to £584.

A Relic of the Prince Imperial.—Last month, Messrs. M. F. Dent, of 33, Cockspur Street, identified the back of a gold watch case as belonging to a watch of their construction that was made for the Empress Eugénie, in 1878, for her son, the Prince Imperial. It has on it a Crown and the initial N. It is slightly battered, and was purchased about six years ago by a customer of Messrs. Weill & Harburg, of 3, Holborn Circus, at Kimberley, from a Zulu.

The Merchandise Marks Act.—The Secretary of the Merchandise Marks Act Association has received the following letter from the Agent-General for Victoria, dated 18th June, 1888: "With reference to your letter of the 3rd February last, relating to the Victorian law in regard to merchandise marks, I am directed by the Agent-General to inform you that, having communicated a copy thereof to the Government of the colony, he has received a despatch in reply, stating that a Bill is being drafted on the subject, which will be introduced into Parliament early next session."

In another column we publish a list of prizes offered by the Royal Scottish Society of Arts for communications submitted to the Society by Fellows or others. Amongst the prizes offered is the Reid and Auld Prize founded by the members of an erstwhile well-known and highly respected Edinburgh firm of clock and watchmakers. Since the founding of this prize many very important inventions in watch and clock making, and allied arts, have been submitted to the society in competition for these prizes, and far above the intrinsic value of the prizes, may be reckoned the honour which their bestowal confers.

Jubilee Coins.—Gold Jubilee five-pound pieces to the value of over £250,000 were coined last year, most of which are being hoarded as souvenirs of the event. Many of these had been in circulation before in other forms, the gold from which they were made being sovereigns that had become light from wear. The double florin was the only new coin of the year. The Jubilee sovereigns coined exceeded a million, and the threepenny pieces were worth £38,000. The total coinage struck represented the sum of forty-three millions sterling.

The death of Mr. David Spencer, the Coventry philanthropist (to whom, as noted in our June issue, a photograph of the Horological Class of the Coventry Institute was presented on April 28th) took place last month, and was mourned by the whole city. Many references were made to the deceased by preachers in the pulpit on the Sunday (17th) succeeding the event, and at a meeting of the City Council on the following Tuesday, a resolution was unanimously carried recording the gratitude of the Council for his large benevolence and affectionate veneration for his memory. The deceased gentleman has bequeathed a legacy estimated at nearly £100,000 to the town to be applied to various charitable purposes.

The New York firm of R. & L. Friedlander experience considerable trouble in counting the number of teeth of broken wheels which are daily sent them to be matched. It consumes considerable time, and as can well be imagined, requires a good deal of patience to do this work properly. As an incentive to inventors who desire to relieve them of this bother, they offer a cash prize of 2,500 dols. to the one who will send them before August 1 a tool which will register the number of teeth a wheel contains. It must count the number of teeth in perfect and imperfect wheels. The firm will put no conditions or obstacles in the way of inventors, as they are very anxious to find a tool that will do this work perfectly. Address all letters to R. & L. Friedlander, 65 & 67, Nassau Street, New York.

A diamond that refuses to be polished is, if not a thing of beauty, at least a distinct curiosity. Ordinary diamonds yield to the persuasive powers of a polishing wheel making some thousands of revolutions a minute, but Messrs. Tiffany and Co., the great New York jewellers, have had to confess themselves beaten by a stone which, after being subjected to the torture of the wheel for 100 days at the rate of 28,000 revolutions per minute, came out of the ordeal in precisely the same condition in which it went in. The surface it passed over amounted to about three times the circumference of the earth. Eventually, instead of the ordinary two pounds, a weight of forty pounds was placed on this recalcitrant stone, but the only effect was to cause it to plough deep furrows into the wheel, which was rendered quite useless. After this Messrs. Tiffany gave up the attempt and sent the diamond to the New York Academy of Sciences.

The Jewellery Trade in Paris.—The Paris correspondent of a contemporary says that jewellers, who for some time past have had good cause to complain, considering how much fashion condemned at one time the use of almost any kind of jewellery, may now once more rejoice and make the most of the sudden rage which has arisen in fashionable circles for jewellery of every description. Jewels are now not only worn as ornaments, but are also introduced into many kinds of little fancy articles. I have already on a former occasion mentioned a card-case with a tiny watch inserted on the outside cover. Another novelty of this kind is a lady's purse made of blue calf's kid, with a silver clasp and a note of interrogation inlaid with diamonds, in the centre, thus elegantly putting the very knotty question, "Am I rich or poor?" I also noted a very pretty bracelet, of delicate design, consisting of a small band of gold with three pansies represented in amethysts and topaz. These narrow bands and loose bangles are now the favourite bracelets, the bands being ornamented with flowers, pearls, &c., and the bangles showing quite a variety of precious stones in all colours. Thus several such bangles are worn together, sometimes as many as four or five, all studded with precious stones.

How to make an American Clock go.—At Greenwich Police Court last month, David Yarrow, a groom, was charged with being in the unlawful possession of an American lever clock, and not satisfactorily accounting for the same, at Court Hill, Lewisham; his defence being that he had picked it up in the roadway. The police sergeant in charge of the case said that he had ascertained from a lady that she was disturbed by some cats fighting, and threw the clock at them. She saw a working man pick it up and go away with it, but she did not want it again, as it would not go. It had, however, gone ever since, and was going now. Mr. Marsham discharged the accused.

Capture of Alleged Notorious Burglars.—At Bow Street Police Court, on the 22nd ult., two men, who gave the names of Frank Bailey and William Davis, were charged under an extradition warrant with burglary within the jurisdiction of the German Empire, when property estimated to be worth £50,000 was stolen from a jeweller's at Munich. The prisoners are well-dressed men of gentlemanly appearance, and it is alleged that they are notorious American burglars, Bailey being known in that country as Frank Buck, *alias* "Bucky Taylor," and described as "a very clever bank sneak." Davis is alleged to be William O'Brien, *alias* Billy Porter, *alias* Morton, described as a celebrated criminal who had been arrested in almost every city in the Union, and was considered second to none in his business of safe-breaking. Mr. Freund appeared for the German Embassy. Mr. Key, instructed by Mr. George Churchley, defended. Detective-Sergeant A. Leach, of Scotland Yard, stated that the papers in support of the charge had not arrived from Germany, and it was only proposed to offer evidence of arrest. Accompanied by detectives Froest, White, Bulterman, and other detectives, he went to the Café Monaco, where the prisoners were seated in a small room. They were known to the police as American burglars under the *aliases* mentioned above. They were arrested on the provisional warrant granted from this Court on the present charge. They both denied all knowledge of the matter, gave false names, and refused to give any address. It was ascertained that Davis was residing at 13, Victoria Road, Fulham, under the name of Morton, and Sergeants Froest and White found that Bailey was living at 28, Tournay Road, Walham Green, under the name of Francis Bailey Allen. A quantity of jewellery, house-breaking implements, and a loaded revolver were found. M. Leicht, hotel proprietor, of Augsburg, near Munich, identified both prisoners as having stayed at his hotel on the 29th of April. A linen-draper from Augsburg, also identified Bailey as having purchased some cloth in April, and both prisoners were remanded.

The Diamond Market.—The *Amsterdam* trade remains the same, viz., little or no demand, and no spirit of speculation. A few Russian buyers were present during last month, and should the great annual fair of Nishni Novgorod turn out successful this year, a demand from that quarter may be expected at the end of the present month or beginning of August.

Now is the time, says *De Diamant*, that foreign buyers, instead of holding aloof, could make favourable investments.

Rough remains at the same price, with a little more activity.

The *Paris* market is extremely dull, not having as yet, it is thought, recovered from the effects of the cold Spring weather. What little trade is done is by the few foreign buyers (mostly American) present.

The *London* market somewhat recovered its tone toward the end of the month, but has been generally very quiet. Plenty of all kinds of stuff has been on sale at average prices. The steamers "Pretoria," "Hawarden Castle," "Athenian," "Grantully Castle," and "Trojan" arrived during the month, bringing fresh parcels from the fields. An accident to the "Spartan" is reported from the Cape.

Advices from *Kimberley*, dated May 19, report: market dull, little demand for stuff, and, at the close, prices lower, with a downward tendency.

Silver.—Latest quotations, Bars—weak—at 42d. per oz.

Trade Notes.

On the morning of the 7th ulto., a fire broke out at No. 3, Stephen's Green, Dublin, gutting the premises of Mr. George Booth, watch manufacturer.

A fire, resulting in the total loss of stock and fixtures, took place on May 31, at the shop of Mr. Whalley, jeweller, of Queen Street, Arcade, Cardiff.

On a charge of misdemeanour under the Bankruptcy Act, Simon Harris, who formerly carried on business at Birmingham, and who last year commenced as a watchmaker in Hatton Garden, was on the 5th ult., sentenced by the Recorder to one month's imprisonment. The offence imputed to him was that previously to his becoming bankrupt he had assigned the whole of his property to his son, Lewis Harris, with intent to defraud his creditors.

Mr. Byrne, jeweller, of Bold Street, Liverpool, has just completed a chalice made from 27 articles of gold and gem set jewellery, recently used for a lady's personal adornment. The chalice is of Gothic design, hand-made and chased. The jewels were valued at £300, and the emeralds, diamonds, rubies, and other precious stones are all suitably set on the chalice, which was designed and manufactured in Mr. Byrne's workshop to the order of a Liverpool gentleman, who is presenting it to a local church.

During the visit of H.R.H., the Prince of Wales to Stolp, North Germany, and through Major von Below, the proprietor of the old-established amber manufactory of that place, Mr. Carl Augt. Westphal, had the honour to be received in the Military Officers' Casino by H.R.H, to show specimens of his manufacture; the Prince expressed himself very pleased, and praised the specimens very highly; he also made considerable purchases from Mr. Westphal, in amber brooches, earrings, necklets, cigar tubes, &c., all of which he ordered to be sent to the English Embassy, at Berlin.

The increased liability of watches to become magnetised, owing to the universal use of electrical appliances for various purposes, is nowadays generally admitted To those engaged in the manufacture of such machinery, or in such scientific experiments as involve the use of electrical or magnetic apparatus, a watch which is unprotected in this respect is almost useless. A reliable stop-watch at a moderate price has long been a desideratum to engineers and others, and it is therefore with satisfaction that we note the introduction into the market of the non-magnetic "Atlas" chronograph, of Messrs. Stauffer, Son & Co., an advertisement of which appears on another page. This watch, the qualities of which are certified by such a high authority as Mr. Johnston Stephen, is placed upon the market at such a price as will ensure a large sale to those who handle it, and we strongly commend it to our readers' notice.

The opening of the Birmingham and Midland Skin and Lock Hospital, was marked by presentation of a handsome key to Mr. Inge. It was the gift of the architects, Messrs. James & Lister Lea & Son, and was manufactured by Messrs. T. & J. Bragg, of Birmingham. It is in silver, richly gilt and enamelled, designed after the style of the new building. The stem is a fluted column with foliated capital and decorative mouldings, leading to a heart-shaped head with rich scrolls and arched top. The Esculapian staff, with serpent drinking from a cup, the symbol of the art of healing, and the heart, an emblem of charity, occupy the upper parts of the head. The name of the Hospital together with the arms of Birmingham in enamel, occupy one side, while the arms, crest and motto of Mr. Inge are placed on the other, also in enamel. The inscription is given on an ornamental shield on the case and the whole design has been carefully and artistically carried out.

On the morning of the 22nd, Mr. G. W. Schoof's establishment at 109, St. John Street Road, was burglarised and an ineffectual attempt was made to break open some iron safes. Nothing of any value was taken, excepting a chronometer which was just ready to be sent in to the forthcoming Greenwich trial. This, however, is sufficiently annoying, as we understand the instrument in question, which has Schoof's 5-tooth lever escapement, was keeping an excellent rate, the result of several months' careful adjustment.

There may now be seen, in the window of the Bristol Goldsmith's Alliance, in College Green, Bristol, a very handsome silver challenge cup, which has been manufactured by the Alliance for the 21st Regiment Madras Infantry, now stationed at Secunderabad, Deccan, India. The body of the cup, on which the regimental arms are engraved, is supported by three delicately-fashioned branches of the native bamboo in full foliage, the stalks reaching to the base of the cup, and held in the centre by an imperial crown, the whole being set on a silver mounted ebony stand, and measuring 22 inches in height, and it is certainly a very fine example of the silversmith's art, and reflects great credit on the Alliance Company. It is interesting to note that the cup is purchased with money given by the Indian Government last year to each native regiment, to be expended in some manner commemorative of the Jubilee of the Queen-Empress, and for the good of the men. The regiment was at that time split up into many small parties in the jungles of Upper Burmah, and no united rejoicing was possible: so it was agreed to purchase a challenge cup, to be held by the company making the best score on the rifle range during each annual course of musketry. It is hoped that this will promote good and careful shooting in the regiment, now-a-day so vastly important a part of a soldier's training. The 21st Madras Infantry was raised in 1786. It took part in the siege and capture of Seringapatam, being one of the battalions that stormed the breach of that fortress. On one occasion, just before the siege, its rear-guard of 100 men, under Captain Renny, was cut off by 3,000 of the enemy's cavalry, said to have been commanded by Tippoo himself, and the whole company fell fighting round their gallant commander. The field next day bore witness to the stubborn fight. The regiment fought at Magpore, in Central India, was present in Afghanistan in 1878-80, and only three months ago returned from two-and-a-half years' active service in Upper Burmah, where by casualties in action and disease its ranks were more than decimated. So that since its birth, 102 years ago, its record has been both full of honour and event.

Burglary at a Pawnbroker's.—During the night of Wednesday, the 13th ult., the shop of Mr. Quinion, 122, Loampit Vale, Lewisham, was broken into, and a large quantity of valuable property carried off. The whole of the jewellery in the iron safe was stolen; and all the valuable pledges, besides £56 in cash, formed part of the booty. Mr. Quinion does not reside on the premises, having another business at Hounslow, so these were in charge of the manager, Mr. Gush, who with his wife and family occupied some of the rooms over the shop. No noise, however, was heard during the night by any of the inmates, and the first intimation the manager had of the robbery was on coming down to open the shop. So far, no clue has been obtained to the thieves. The articles stolen were of course of a very miscellaneous character: among those bearing distinctive marks were:—Gold locket (thin), portrait one side and hinges broken; gold locket (chased and portrait inside); necklette (thin) and locket (chased), "E. N." thereon; silver lever hunting watch, 14,462; keeper ring, "E." marked outside; silver Geneva watch, 2,743; silver verge watch (gold hands), "William Hampshire" inside; silver lever watch, 5,164; silver lever watch, "Uppingham, Leicester;" silver hunting watch (1,529), "Murdoch," M. chain: silver Geneva watch, crystal glass, "Smith, Newington Causeway;" silver Geneva hunting watch (30,845) and silver guard: silver albert and locket, fox's head on front; earrings—two 3d. pieces, dates 1834 and 1864. In addition to the cash taken, the value of the jewellery stolen is estimated at £250.

Birmingham News.

From Our Correspondent.

There has been rather more business doing during the month of June than is usual of late years at this quarter of the year, and the general tone is hopeful that the summer term, which is always regarded with a certain amount of doubt, if not fear, will not be so conspicuous for the absence of orders as some of the preceding ones have been. There are evidences of this in various quarters.

* * *

The "Pebble Jewellery" Manufacturers have been busy with novelties for the sea-side and shipping trade, while some of the makers of cheap lines of solitaires, with patent actions, have had to refuse orders that were wanted "to date;" this is a considerable improvement upon last year.

* * *

The enterprising firm of Clockmakers, trading as the British United Clock Co., Great Hampton Street, Birmingham, are competing very successfully with the Americans in making small clocks of various designs with nickel-plated and other cases: finding it necessary to have larger work rooms and more machinery, they are erecting more extensive premises at the top end of the Aston Road, near Gravelly Hill, one of the suburbs of Birmingham, where, with their increased facilities for production, they purpose an extensive "turnover" and a greater variety of produce.

* * *

Although Watch Repairing is said to be cut to its lowest limits as to price, there are two new retail repairers opening establishments in the neighbourhood this last week.

* * *

The firm of Messrs. R. Kent & Sons, of Upper Hockley Street, Birmingham, Manufacturing Jewellers, finally closed their trade on Thursday, June 14, when all the trade fixtures, tools, stock of precious stones, &c., were sold by auction on the premises.

* * *

Mr. E. Turner, Manufacturer of Gilt Jewellery, late of Lodge Road, Hockley, Birmingham, has removed to other premises in Vyse Street, at the corner of Richard Street.

* * *

Mr. H. Spiers, at one time in the Gold Chain trade in Warstone Lane, has just taken premises in Northampton Street, where he has made a start in manufacturing gem rings.

* * *

Mr. T. S. Osborn, latterly with Messrs. Osborn & Co., Spencer Street, has separated from them and is now making gem rings at his premises, No. 5, Key Hill Drive, Birmingham.

* * *

Some of our oldest jewellery manufacturers have so little faith in the prospect before the trade, that one has sent his son into a poultry farm, while another has placed his son with a firm of estate agents. In both instances the sons have been in the business with their fathers for some years as jewellers; this is an illustration of the old adage that "every man believes that his neighbour's business is better than his own."

At Brentford, on the 16th ult., a young man, giving the name of Charles Fitcher, of 72, St. Margaret's Grove, Twickenham, was charged, on his own confession, with stealing a silver watch, placed in his possession to repair. Police-constable Cox, 13 T, stated that while on duty at Brentford Police Station, on Friday, the prisoner entered, and said he wished to be charged for pawning a number of watches which had been left with him to clean and repair by several persons. He stated that he had lived at Twickenham for a month, and then took fifteen pawn-tickets (produced) from his pockets. These related to gold and silver watches, which had been pledged by prisoner at Hammersmith, Brentford, Hounslow, and Twickenham. Prisoner said he had pledged the watches to keep himself, as he was unable to collect debts due.—Remanded.

Board of Trade Returns.

NOTWITHSTANDING the proverbial nature of calculations based upon statistics generally, the increased volume of trade for the present year, as shown by the Board of Trade Returns to hand for the first five months of the year, should do much to remove the gloom which has unfortunately prevailed for so long a time among manufacturers and traders. An increase is to be noted in all classes of goods, both in imports and exports; and the returns bear witness to an accelerated activity among our home manufacturers, and an extended demand for British goods, together with an enhanced ability to purchase raw material and edible commodities.

The industries we represent, it is satisfactory to observe, participate in the general improvement; and as these industries are usually the first to suffer from the effects of trade depression, and the last to experience a relief from them, it is to be hoped that the improvement indicated is of a permanent nature, and that we are now on our way to the normal condition of prosperity of some years ago.

The following figures taken from the returns allow of a comparison being made with corresponding periods of the two previous years:—

The clocks and parts imported during May are valued at £38,565, as against £34,062 in 1887, and £35,208 in 1886. Of these there came from—

	1886.	1887.	1888.
France	£20,480	£17,618	£16,142
United States	4,452	7,686	9,204
Other Countries	10,276	8,758	13,219

The first five months of this year show an import of clocks amounting to £186,009, in comparison with £156,889 in the same period of last year, and £151,167 in that of 1886.

The watches and parts thereof imported in May are recorded to be of the value of £49,719. In the same month of last year the value was £68,087, and in that of 1886, £65,848. The five months of this year give a total value of £224,856, against £229,876 in the same period of last year, and £254,422 in the same month of 1886.

The plate, plated and gilt wares exported last month valued £30,958, in comparison with £20,778 in the May of last year, and £35,598 in the same month of 1886. For the five months of this year the record is £138,691. The same period of last year gave a total of £112,376, and £141,174 was the total for 1886.

The imports of every kind of produce for May reached the total of £30,370,775, against £27,921,321 in the same month of last year, and £29,023,303 in the May of 1886. The imports for the first five months of this year have reached the total of £159,303,953. The same month of last year reached the value of £151,329,092, and for the same period of 1886 the total was £141,761,602.

The exports during May reached £19,276,225 in value, in comparison with £16,497,836 in the same month of last year, and £16,301,022 in that of 1886. For the first five months of this year the exports have reached £93,635,100, while for the same month of last year the value was £86,975,449. The same month of 1886 showed a value of £84,825,686.

The Royal Observatory Report.

THE Report of the Astronomer-Royal to the Board of Visitors of the Royal Observatory, was read at the annual visitation of the Observatory on June 2nd.

The present Report refers to the period of 356 days from May 21, 1887, to May 10, 1888 inclusive, and is divided as usual into: I. Buildings and Grounds, Moveable Property, and Library. II. Astronomical Observations. III. Spectroscopic and Photographic Observations. IV. Magnetic Observations. V. Meteorological Observations. VI. Printing and Distribution of Greenwich Publications. VII. Chronometers, Time Signals and Longitude Observations. VIII. Personal Establishment. IX. General Remarks.

The building operations for the extension of the computing rooms and erection of a dome 18 feet in diameter which were commenced in November last were completed by April 27, with the exception of the new dome of Sir Howard Grubb, which, however, is now nearly finished. It is intended to mount the Cooke 6-inch equatorial, with the photoheliograph tube attached, on the new pier as soon as the dome is completed. Bradley's North Quadrant has been removed to the Transit-Circle room. The South Quadrant on the east face of the pier has not been disturbed.

A new flue with independent outlet has been fitted to the chronometer oven to carry off the fumes from the gas jets. The south-east dome has been warmed during the winter months by means of heated air from the stove in the Chronometer room.

As regards moveable instruments, some are out on loan at the Cape Observatory, the Royal Naval College, the Hong Kong Observatory, and Kew.

The Cooke 6-inch equatorial has been mounted temporarily in the south ground since the beginning of June 1887 for observation of occasional phenomena.

The subject of approaching railways has again, after a lapse of many years, engaged the serious attention of the Astronomers. Early in March notice was received from the Home Office of a proposal to carry a railway (in extension of the authorised Bexley Heath Railway) in a tunnel across Blackheath, the nearest point being 840 yards from the Observatory. As there was reason to believe that this railway might injuriously affect the Observatory, preliminary observations of the effect produced on the existing Greenwich—Maze Hill Railway, were at once commenced, the observations being made on six nights with the transit-circle, and the disturbance in the image of the wires, as seen by reflexion from the trough of mercury, being noted. It resulted from these experiments that trains on this railway caused great disturbance during their passage, not only on the section between Greenwich and Maze Hill, the nearest point of which is 570 yards from the transit circle, but also on the line beyond Greenwich on the London side and beyond Maze Hill on the Woolwich side. The distances of the Greenwich and Maze Hill stations from the Observatory are about 970 and 670 yards respectively. There was also evidence of other disturbance from trains at about a mile distance from the Observatory, but the times of passage of these trains could only be inferred from the published time-tables.

In order to establish conclusively the connexion between definite disturbances and trains, arrangements were made to note the times of arrival and departure of trains on the Greenwich line and at Blackheath.

Observations having been made on this plan for a number of days, it was found that the disturbance was very great during the passage of trains, especially at the minimum distance of 570 yards, when the reflected image was invisible. As the tunnel of the proposed railway would be similar in character but at half the distance, it was concluded that it would cause so great a disturbance as to make delicate observations impossible, and on this being notified to the Admiralty by the Astronomer-Royal, the bill was opposed on the part of the Government, and as a consequence the clauses authorising the construction of the railway across Blackheath were abandoned.

The Astronomer-Royal, in concluding this portion of his report, hopes that, though the terminus is only 620 yards from the Observatory, the tremor from the trains on the extension of the Chatham and Dover railway from Blackheath Hill to Greenwich, will not have sufficient time to produce the full accumulated effect in the short interval between Blackheath Hill and the terminus. But if at any future time a further extension of this line should be proposed, the question would require very careful consideration in the interests of the Royal Observatory.

The Clocks and Chronograph are in good order. The Sidereal standard clock stopped on October 15, through thickening of the oil. It was cleaned by Messrs. E. Dent & Co., and brought into use again on November 7.

The Lassell Equatorial is in good order. The driving clock has required some small repairs. The dome, 30 feet in diameter, is in excellent order, and it has been found that it can be turned completely round (through 360°) in 30 seconds by one person.

No progress has been made since the date of the last Report in the construction of the new 28-inch refractor, owing to the difficulty in obtaining the crown disc. The flint disc made by Messrs. Chance seems to be satisfactory, but up to the present neither that firm nor M. Feil's successor has succeeded in making a crown disc.

The Sheepshanks Equatorial was completely dismounted and thoroughly cleaned, the object-glass was re-centred, and the slow motions were repaired and improved for adaptation of the instrument to stellar photography under Mr. Criswick's supervision. A 4-inch photographic object-glass by Dallmeyer, belonging to one of the photoheliographs, was mounted last year in a light wooden tube and firmly attached to the side of the telescope tube and parallel to it, to carry out experiments on the extent of field available on plane and curved plates respectively, the latter being moulded by Messrs. Chance to a radius of 22 inches, corresponding to the curvature of the field, if the circle of least confusion be taken for the image. Numerous photographs with different exposures and in different parts of the plate have been taken of the Pleiades and other objects, thirteen of these being on curved plates. In these experiments the Sheepshanks reflector was used as directing telescope, the image of a star being kept on its cross wires during the exposure of a plate by means of the slow motions. The plates measure 6 in. × 6 in., representing $5\frac{3}{4}^\circ \times 5\frac{3}{4}^\circ$, and it is found that on the flat plates the star images are sensibly circular to a distance of nearly 2° from the centre of the field, while micrometric measures of these plates show that for some distance beyond this limit the relative places of stars can still be measured with an accuracy exceeding that of meridian observations and with no sensible systematic error depending on magnitude or duration of exposure. Comparison of the results on flat and curved plates respectively, indicates that the advantages of using the latter are doubtful. As the Dallmeyer object-glass is peculiar in having the flint outside, it was reversed in the cell in the course of the experiments, and some photographs were taken with it in this position, the flint being inside. It appeared on comparing the results that a somewhat better field is obtained with the flint outside. A photographic object-glass of 6 inches aperture and 6 feet focal length, made by Sir H. Grubb for experiments, was mounted at the end of April, in place of the 4-inch object-glass, and some trial photographs of stars have been taken with it.

Under Section IV. (Magnetic Observations) of the Report, we learn that a renewal of the earth-current wires concurrently with the telegraph wires on a portion of the South-Eastern Railway, which was arranged in concert with Mr. Leonard, has not been carried out owing to the rise in the price of copper.

The Driving Clock of the new thermograph, having given much trouble, was sent to Mr. Kullberg last year for improvement of the mechanism. Many small changes were made, and a new pendulum was provided.

Thermometers.—The observations in 1887 of the thermometers on the Magnet House roof confirm those made in the previous year in giving generally a smaller diurnal range than those on the rotatory stand, the day temperatures in summer being lower, especially on very hot days.

Chronometers.—In the year 1887 the average daily number of chronometers being regulated was 224; the total number received was 717; the total number issued was 642; and the number sent for repair was 315. In the supplementary trial of chronometers, terminating in June of last year, the first seventeen were all good, and the general standard of excellence was very high, though the somewhat shorter duration of the trial prevents a strict comparison of trial numbers with those in the annual trials. The first chronometer in the annual trial 1887, was very good indeed, and the next four appear to be fine chronometers. The performance of the first six was decidedly above the average of recent years, though the trial was somewhat more severe than usual as regards range of temperature, the extremes being 37° and 100° Fahrenheit.

Deck Watches.—For the annual trial of deck watches, November 26, 1887, to February 11, 1888, 21 watches were entered, and of these, nine were purchased for the Navy, the first three being class "A" or equal in performance (on the eleven weeks' trial) to an average box chronometer.

All pocket chronometers and deck watches on trial for the Navy, whether for purchase or after repair, are now tested in different positions as well as in the oven.

At Captain Wharton's request some experiments were made in the latter part of 1887 on a chronometer, the rate of which appeared to be affected by the motion of the ship. It was found that the rate of this chronometer with the gymbals free was different from that with the gymbals fixed; two other chronometers which were tested in the same way for comparison showing no such defect.

Time Signals.—There has been no failure in the automatic drop of the Greenwich time-ball, but on four days the ball was not raised on account of the violence of the wind. The Deal time-ball failed on six days owing to interruption of telegraphic connexions, and on two days high wind prevented the raising of the ball. There has been no case of failure of the 1 p.m. signal to the Post-Office Telegraphs.

There have been 23 failures in the automatic signals for the Westminster clock since the date of last Report. The error of the clock was insensible on 25 per cent. of the days of observation, 1 sec. on 38 per cent., 2 secs. on 20 per cent., 3 secs. on 15 per cent., and 4 secs. on 2 per cent.

Difference of Longitude.—Provision has been made in the estimates for the expense of a redetermination of the difference of longitude between Greenwich and Paris, and the Astronomer-Royal reports that he has been in communication with the French authorities on the subject. The death of General Perrier occurred before any definite plan had been settled, but his successor M. le Commandant Bassot, has taken the matter up warmly in concert with Admiral Mouchez, and the French Bureau des Longitudes has approved the scheme, which is to include a determination of the longitude of Dunkirk.

The only change in the personal establishment of the Observatory is the addition to the clerical staff of Mr. Wickison, who has charge of the accounts, publications, and official correspondence.

In concluding his Report, Mr. Christie refers to his allusion in the last Report to the increased demands made on the Observatory in recent years both by the scientific and general public. He says, in view of the consequent development of work, it now becomes necessary to review the position of the establishment, which was constituted many years ago when the conditions were very different. After pointing out the inadequacy of the present staff to perform all the duties that are required of them, in addition to the extraneous work which he has thought it desirable to undertake in the public interest, he significantly adds: "under these circumstances it becomes a matter for serious consideration whether, unless adequate provision be made for the primary objects of the Observatory, extraneous work, such as the supply of time-signals, may not have to be dropped. The service of hourly time-signals throws considerable work on myself and the staff of the Observatory, and as it is purely voluntary, it appears to me that a condition of its maintenance must be that arrangements shall be made to enable the proper work of the Observatory to be carried on and suitably developed."

Water-resisting Cement.—A good cement, which completely resists the solvent action of water, may be prepared by the following process: From five to ten parts of pure, dry gelatine are dissolved in 100 parts of water. To the solution about ten per cent. of a concentrated solution of bichromate of potash is added, and the liquid is kept in the dark. When articles joined by this cement are exposed to the light, the gelatine film is acted upon, the chromate being partially reduced and the film of the cement becomes tough and durable.

The International Exhibition, Glasgow.

THE Exhibits in the gold and silver trades have been divided into three sections, and housed in three different parts of the Exhibition. The division is the natural outcome of the exhibits, and its fitness is at once apparent. 1st, There is the Archæological section, in the Bishop's Castle; 2nd, The International section—as represented in the Queen's Jubilee Presents—in the Hunterian Museum; and 3rd, The Trade Exhibits, in the main building of the Exhibition.

For everything there is a season, and a time for every purpose under heaven. For the removal of our ancient dwellings and historic buildings there was a time; and for their re-erection, that the present generation may see, as it were through the spectacles of their ancestors, modern exhibitions seem to furnish a season. Glasgow in this respect has not differed from other cities, nor does its Exhibition differ from recent exhibitions, for it has provided a reproduction of its ancient Bishop's Castle. In one important respect, however, it does differ; for although the castle is a reproduction, the exhibits themselves are no replicas, but one of the finest collections ever brought together to illustrate the customs and superstitions, the weapons and costumes, the arts, the handicrafts, and, in short, the history of Scotland, of her sovereigns and princes, of her reformers, poets and outlaws, during some of the most tragic periods of her existence.

A special effort has been made to collect as much of old Glasgow plate and curios as could be obtained, and it is in an examination of these that the silversmith of to-day will find most interest, and the collector of old plate and students of old hall-marks most information.

The history of the goldsmiths who wrought in the old burghs of Scotland has never been written, and it may not be uninteresting in this connection to say something about our trade in Glasgow in early times. Their records exist and their names are known, but up till now it has been the lot of few to see their handicraft impressed with their quaint old punches and to form an estimate of the state of trade and the capacity of the craftsmen of bye-gone times.

The goldsmiths of Glasgow were incorporated with the hammermen whose seal of cause was granted in 1536. The first mention in the records of a goldsmith occurs in 1616, when John Kirkwood was the sole representative of the craft in the burgh.

Glasgow, now a city of three-quarters-of-a-million of inhabitants, was at that time a small burgh and university town, containing about 5,000 inhabitants, some of them merchants (shopkeepers), others craftsmen, not such individuals as would be found now carrying on trade or the useful arts in a burgh of the same size, but men accustomed to the use of arms and retaining a strong tinge of the old feudal system.

At intervals of from 30 to 40 years successive names appear until about the last decade of the seventeenth century; we find that there were five goldsmiths working at the trade in Glasgow at one time. Jotted down on the back of a draft of a proclamation issued about that date, and which has been most wonderfully preserved to the present day, appear the names of the goldsmiths carrying on business in all the burghs of Scotland. From it we glean a numerical view of the strength of the trade. In Edinburgh there were about 25; Glasgow, 5; Aberdeen, 3; Perth, 1; Inverness, 1; Ayr, 1; Banff, 1 and Montrose, 1; in all of which places plate was manufactured and hall-marked with the distinctive mark of the burgh.

No Glasgow plate of the earliest date is known to exist. This is not to be wondered at, for frequently there appears in the old burgh records entries of proclamations ordaining the inhabitants to bring to the officers they appointed "their haill silver plait" for the purpose of being melted down and "bestowit in defence of the good common cause."

The social status of the goldsmiths of Glasgow differed much from their brethren in Edinburgh. In the Capital they were the bankers, money-lenders and speculators of their day, while in Glasgow it was the merchants and specially the "Tobacco Lords" who were the trade aristocrats. This may account for a curious fact that it was no uncommon thing for some craftsmen to be partners in many strange concerns altogether alien to their ordinary business. Thus we find that the most famous family of Glasgow goldsmiths—the Lukes of Claythorn—(much of whose plate is to be seen in the Exhibition) were partners in a Soaperie, an Ironwork and in many adventures with ships—notably in one in which Cherry Sache was first imported into Glasgow. On the other hand monopoly was the rule of trade in Edinburgh, and, as is abundantly proved by the records, if any goldsmith ventured beyond the strict limits of his trade he was speedily expelled from the Incorporation, and his name deleted from the roll.

It is questionable if up to 1730 any goldsmith had a shop in Glasgow. In 1753 Robert Luke who was at one time treasurer for the city was succeeded by Bailie James Glen, and it is noted that at that time he was almost the only one in the trade in the west of Scotland. Again in 1790 we find that there were only two goldsmith's shops of any note in the city; one kept by Adam Graham, in King Street, and the other by Robert Gray in the Trongate, and strange to say the latter silversmith could in addition to his more valuable wares always furnish a customer with a cane or umbrella—the latter at that time a modern luxury, being usually made of yellow or green glazed linen.

This is not the place to dwell upon the habits and mode of life in that ancient burgh with its rapidly succeeding alternations of war and peace, of revolution and rebellion. In peace there life was of the quietest description. At "twa'l hours" they adjourned for the mid-day meal, when even the banks were closed. In the evening they patronised their clubs—and Glasgow was famous for its clubs—where rum punch was their favourite beverage. Annually the trades perambulated the streets with their office bearers at their heads carrying the Insignia of their crafts. The life was a quiet one and tended to longevity, for the records seem to show that most of them survived to a good old age. Thus they lived and died, and by a strange irony of circumstances, the identical articles which they fashioned and used are gathered together in the same city, indeed, but on a spot which in their time was green fields and grassy knolls.

The collection as a whole has been gathered as it were round the lives of some of the most famous personages of Scottish history, such as Malcolm Canmore, King Robert the Bruce, Queen Mary, John Knox, Prince Charlie, Rob Roy, Burns and the Covenanters, and the events of their times.

It may not be uninteresting to give some details, though necessarily they must be disjointed, of these relics, and specially of those belonging to our own trade.

The most interesting relic of Robert the Bruce is the Old Brooch of Lorn, which fastened his plaid at the Battle of Dal-Righ, in 1306. By a stroke of his battleaxe the king killed his assailant, but at the same time lost his mantle and brooch, which were torn away in the dying agonies of the Highlander. The brooch was long preserved at Dunolly Castle, but disappeared in the 17th century, when the castle was burned by the McNeils. It was believed to have been carried away by the latter, but, apparently overawed by their powerful enemies, they neither displayed it nor boasted of its possession. Having fallen into decay, they sold it in 1822. It is said to have been accidentally observed by General Campbell, of Lochnell, in the window of a jeweller in London, and he purchased it and presented it to its hereditary owner. There are also shown a pair of silver spurs, which were found in the tomb of King Robert the Bruce at Dunfermline. A kind of tragic interest attaches to a silver finger ring, which was found, with the finger bone still in it, in ploughing up the Muir ground, on the field of the Battle of Harlaw, which was fought in 1411.

Of relics which belonged to the unfortunate Queen Mary Stuart, there is a very large collection, extending throughout her whole lifetime—from the cradle in which she was nursed in Linlithgow Palace to the Prayer Book she handled upon the scaffold. Four watches of hers are shown: one—with catgut instead of chain—has an exquisitely embossed case. Another is of octagonal form with the case of rock crystal. Her "Memento Mori" Timepiece is worthy of more detailed notice. It was given by the Queen to Mary Seton, one of the four Maries, Maids of Honour. The watch is in the form of a skull. On the forehead is a figure of death standing between a palace and a cottage. Around is this legend from Horace "Pallida Mors Equo Pulsat Pede Pauperum Tabernas Regum Que Turres." On the hind part of the skull is a figure of time with another legend from Ovid "Tempus Edax Rerum Tu Que Invidiosa Vetustas." The upper part of the skull bears representations of Adam and Eve in the Garden of Eden, and of the Crucifixion, each with Latin legends and between these scenes is open work, to let out the sound when the watch strikes the hour on a silver bell.

A gold and garnet necklace enamelled in red and set with Scotch pearls is especially worthy of notice. The design is that of a Stafford knot with quatrefoils of pearls between. It is said to be of Scottish workmanship, and if so, would indicate one of two things, either that French workmen worked at that time in Scotland, or that our ancestors possessed a skill we never gave them credit for. There is also a fine antique gold cross pendant, exquisitely enamelled on front and back, set with rubies and emeralds and Scotch pearls, and a gold solitaire with an enamelled figure of Cupid trying to catch a mouse, with the motto, "Simplex appares, simplicitate cares."

Queen Mary's Candle Cup attracts attention. It is made of agate with silver handle and mounts, and the hall mark—a Unicorn's head erased—would lead us to infer that it was of Scottish manufacture.

An Etui with exquisitely chased fittings in silver and a silver gilt hand bell indicate considerable refinement for that age.

Among the specimens of ecclesiastical plate is a chalice of considerable historical importance. Tradition attributes it as the gift of Queen Mary to the Church of Perth, and says that during the riots which sprang from the preaching of John Knox, it was picked up by an old woman who concealed it in her father's grave. Its workmanship is further attributed to Benvenuto Cellini, and it is said to have come into the possession of Queen Mary as a gift from the Pope. Whatever is its origin, it is a cup of surpassing excellence, and is besides the only pre-reformation chalice still in use in the church of Scotland.

John Knox's watch traditionally regarded as having been presented to him by Queen Mary at the time when she was anxious to cajole him into an approbation of her measures, is precisely of the same description as another watch given by the Queen to one of her attendants, and which was made by Hubert of Rouen, a famous watchmaker at that time.

A very fine rock crystal jug with silver gilt pierced mounts, which was presented by Queen Elizabeth to the Regent Mar for the baptism of one of his children, bears the maker's punch of Bailie Cok, a well-known Edinburgh goldsmith of the sixteenth century. It is among one of the earliest plate-marks known to exist in Scotland.

Of the famous Highland freebooter, Robert Campbell, so well portrayed in Sir Walter Scott's romance of "Rob Roy," several curiosities are shown—his sword, silver-mounted pistol and sporran, and also two silver-mounted snuff boxes.

For the collection and preservation of Jacobite relics there seems to have been quite a rage last century. One enthusiastic collector has actually preserved and pasted inside the boards of a book small fragments of the dress, apron and apron strings which Prince Charles Edward wore when obliged to disguise himself in female attire. A pair of pocket pistols inlaid with gold, with the dirk and claymore which he carried at the battles of Falkirk, Prestonpans and Culloden are all exhibited, besides the candlestick which he used and the quaich from which he drank at the Inn of Ruskie. There is also a target of wood covered with leather and studded with silver ornaments, richly embossed and of French manufacture, which was borne by the unfortunate Prince at Culloden. The mottoes on three of the Jacobite rings are notable: (1) "Awa, whigs, awa;" (2) "Do come;" (3) "The rose that's like the snaw." The relics of Highland Chiefs who rose in the "45" are numerous—the dirk and snuff mull of Cluny Macpherson, and the Ferrara Claymore which belonged to MacDonold of Keppoch, who was executed at Carlisle for his connection with the rising. His head was set up at the Scots Gate at Carlisle. Regarding this circumstance, David Hume the historian is said to have written the following lines on a pane of glass in the old Bush Inn, at Carlisle.

> "Here chicks in eggs for breakfast sprawl,
> Here godless boys God's glories squall,
> Here Scotsmen's heads adorn the wall,
> But Corby's walks atone for all."

Coming down to a later period we get a good idea of the domestic habits and requirements of our ancient burghers from a collection of old Scottish—indeed principally Glasgow manufactured—plate.

Of spoons there is a large variety of all sizes but principally plain. The "plague" spoon is specially notable as an illustration of the superstition which prevailed down even to recent times. It was believed to possess talismanic or medicinal virtues. It is formed of a Cowrie shell mounted in silver, with the wand of Æsculapius surmounted by a figure. Medicine taken from this spoon was believed to be an infallible remedy for the plague, and so highly were its virtues esteemed that persons flocked from all parts of the country to test its healing powers.

There is only one salt cellar of large size and curious form. Of drinking cups there is an endless variety. There is only one of the old claret cups—similar in size and style to our modern child's jugs—used in the end of the seventeenth country. Two cups of similar design were in the possession of George Heriot's Hospital, in Edinburgh. But of quaichs used for the more potent aqua there is an embarras de richesses. Some have two handles, some three, and so common does this form of cup seem to have been that one church had its communion vessels fashioned after this design and still continue to use them.

There are two tankards and three punch bowls—the latter plain in design but capacious in size. We have been at the trouble to ascertain the cost of one of them which was a presentation by the Glasgow Corporation in 1733, and have found that they paid 7s. 4d. per oz. for it. One article is described as a sugar dredger but seems more likely to have been part of an old cruet frame. There is one salver—unique in outline—dating as far back as the reign of Queen Mary. Of snuff boxes there is no end—both of those which belonged to private individuals and to Burghs and Incorporations.

Among the University relics there is one mazer bowl made of elm root and mounted in silver which is the oldest piece of Scottish hall-marked plate we have come across. It bears the date 1567, but is impressed with the deacon's punch for 1561 when Thos. Ewing was deacon of the Edinburgh Incorporation.

There are three silver maces belonging respectively to Glasgow and St. Andrews Universities. They were found in the tomb of Bishop Kennedy, in 1683. The design and workmanship seems to be French and in all probability they are of the date 1465 assigned to them.

The loving cup of George Heriot is interesting, not only from its connection with that famous goldsmith but also an account of its workmanship which is attributed to himself, and which would certainly lead us to infer that "Jingling Geordie" had little to learn at the hands of the nineteenth century goldsmiths.

The sports of the people would seem to have been divided equally between two great national games—archery and golf. The Royal Company of Archers, Edinburgh, have sent their valuable collection of arrows, medals and prizes. The medals themselves which date as far back as the 16th century are principally interesting as illustrating the progress of engraving. Many of them have been engraved by famous picture engravers, and could not be much excelled nowadays. The Ancient Societies of Kilwinning, Irvine, Kirkindbright, St. Andrews and other places have all sent their trophies, and the collection is one of the most complete in the whole castle. The ancient form of golf prizes was a large silver golf club, to which each year was attached a silver golf ball with the winner's name inscribed on it. Of these there is quite a collection, too numerous to specify.

It is impossible within the limits of this article to do more than refer to the main features of this collection or to indicate very feebly the wealth of interest which is bound up within it.

We will conclude with a notice of one curious relic which takes us back to the days when it was considered rather a disgrace to go sober to bed. This is the "whistle" immortalised in poetry by Burns. Its history which is undoubtedly authentic, is curious. In the train of Anne of Denmark, when she came to Scotland with James VI., came a Danish gentleman of gigantic stature and great prowess, and a matchless champion of Bacchus. He had a little whistle which at the commencement of the orgies he laid on the table, and whoever was the last able to blow it—everybody else being disabled by the potency of the bottle—was to carry off the whistle as a trophy of victory. The Dane came an unvanquished hero to Scotland without the record of a single defeat; but on encountering Sir Robert Lawrie, of Maxwelton, he was left under the table after three days' and three nights' hard contest, when the Scotsman "blew on his whistle his requiem shrill."

The Electrical Distribution of Time.

By Allan D. Brown, Commander, U.S. Navy, Assistant Superintendent of the Naval Observatory, Washington.

A Lecture delivered before the Franklin Institute, *January 13, 1888.*

THE significance of the Astronomer-Royal's concluding remarks in his report, published on another page, render the publication of the following lecture, which we abstract from the pages of the Journal of the Institute, peculiarly well-timed, and it will doubtless be appreciated by those of our readers who are interested in the Greenwich time signals.

Commander Brown, who was introduced by Professor E. J. Houston, spoke as follows:—The subject upon which I have the honour to address you this evening is the Electrical Distribution of Time. Leaving out of consideration the question as to what time is, what its measure and how obtained—questions, the answers to which would of themselves serve as a subject for an evening's lecture—I will pass at once to a definition of the title which has been chosen for this address. By this title is understood the causing of the instant shown by a timepiece at a central station to be marked by some apparatus prepared to receive the necessary signal at another station in electrical connection with such central station.

If the apparatus at the receiving station is in the nature of a timekeeper, its operation must be automatic; and to secure the highest possible accuracy, the action of the central time-piece must likewise be automatic. In its best form, then, our title may be said to mean the automatic electrical synchronisation of one or more clocks by a clock at a central station; with this synchronisation may also be associated the registering of the signal upon a chronograph, the ticking of a telegraphic instrument, the firing of a gun, the ringing of a bell, the discharge of a flashing signal, or the dropping of a time ball; in a complete system any or all of these means will be used according to the circumstances of the case under consideration. It is essential, to insure the highest order of accuracy, that the central station shall always be at an astronomical observatory, and preferably at one which is able to devote the services of one or more persons to this special duty. Such work is known briefly as a time service, and its signals as time signals. A brief historical review of the evolution of the time service of to-day will not, it is hoped, prove uninteresting.

As early as 1816, one Ronalds, an Englishman, invented a telegraph which was so dependent upon timepieces for its working that it may be said to have been a device for the temporal distribution of electricity. He connected two clocks with some 500 feet of insulated copper wire; upon the seconds arbor of each clock was placed a circular plate of brass, the circumference of which was divided into twenty equal parts, the chief letters of the alphabet and a double series of numbers up to ten being placed in these divisions. In front of this was a second plate in which was an opening through which one letter and figure were visible; in front of this latter plate was suspended a pith-ball electrometer connected with the wire between the two clocks and also with a frictional electric machine; this apparatus was in duplicate, one for each end of the line. An electrical pistol was also in circuit when the apparatus was not in use, so that by its discharge the attention of the attendant would be attracted when desired. The manner of using this telegraph was as follows: The clocks were first supposed to be accurately synchronised, so that the same letter would appear at the same instant in both plates; the machine was turned and by the electricity thus generated the pistol at the other end of the line was discharged; the attendant in reply made a signal previously agreed upon, by waiting until this pre-arranged letter was in sight and then turning his machine, when the charge would cause the pith balls of the electrometer to diverge at both stations; the first operator would cause the discharge of the machine by a touch, the pith balls would fall together; the message would then be sent in like manner as each letter came in sight through the hole in the upper plate, the receiver noting each letter as the balls fell. There were two difficulties in the way of the use of this plan; (1) that of obtaining a current at all times; (2) the fact that it would be impossible to keep the two clocks always exactly together; this, however, could easily have been gotten over, as the sender could signal when a certain letter was visible, and the receiver noting the one he saw could then tell how much his clock was out of the way. In effect this was the first attempt at telegraphic time signals, and for this reason only is it here referred to.

In 1833, the German mathematician Gauss, associated with Weber, erected a line of telegraph some five miles in length, connecting the astronomical and magnetic Observatories in Göttingen with various other stations. He obtained his current from a crude form of magneto-electric or dynamo machine and the whole apparatus was of a very unwieldy character; a flattened coil containing some 30,000 feet of iron wire had suspended within its centre a magnetised bar weighing some 30 pounds; upon the suspending wire was arranged a mirror in which was reflected a scale, the latter being viewed through a magnifying glass.

The dynamo had a pole changer so that the current could be sent in either a positive or a negative direction, and thus the bar be deflected either to the right or the left at the will of the operator; by a combination of these deflections a message could be spelled out. By this apparatus, as I have gathered, comparisons of clocks were actually made, and to these gentlemen is therefore due the honour of sending the first telegraphic time signals. Although no particulars of the way in which this Time Service was operated are on record, it may easily be surmised that the method was somewhat as follows: probably the hour selected for the signal was noon; two or three minutes before that hour by the standard clock, a signal would be sent over the line: as the hands of the clock marked the exact hour, one distinct deflection of the bar would be made, at which instant the receiver would note the time shown by his clock; subsequently ascertaining the error of the standard, that of the other would readily be deduced.

In 1840, Mr. Charles Wheatstone announced the invention of an apparatus "enabling a single clock to indicate the same time in as many different places, distant from each other, as might be required." He proposed to accomplish this object by connecting electrically a standard clock with his *electro-magnetic clock*, which latter consisted "simply of a face with its second, minute and hour hands, and of a train of wheels which communicated motive-power from the arbor of the second hand to that of the hour hand in the same manner as in an ordinary clock train;" a small electro-magnet was caused to act upon a peculiarly-constructed wheel placed on the seconds arbor, in such a manner that whenever the temporary magnetism was either produced or destroyed, the wheel (and consequently the second hand) advanced the sixtieth part of its revolution. On the axis of the scape wheel of the primary clock was placed a small disc of brass, which was first divided into sixty equal parts; each alternate division was then cut out and filled with wood, so that the circumference consisted of thirty alternations of wood and metal. A very light brass spring was secured to an insulator attached to the clock frame, its free end pressing upon the circumference of the disc; connection having been made between the insulated end of the spring and one end of the wire with which the electro-magnet was wound, the circuit was completed by the other end of the wire being connected to the clock frame through a battery; the primary clock being running, it followed that the circuit was made and broken each alternate second, while the distant dial recorded the advance of its wheel in unison with that of the parent clock. This is practically the same thing as the so-called electric time system of the present day, and it was the first attempt at the distribution of time by electricity. It had the defect common to all such systems of being applicable to only a limited space, and in addition it was subject to the same trouble that besets everyone who proposes to rely upon electricity derived from a battery as a motive-power for any sort of machinery; accidents *will* occur, and in a system of time distribution on this plan an accident is fatal to precision.

The completion of the Morse telegraph between Washington and Baltimore, in May, 1844, afforded the means for the next step in the evolution of our subject, and for this we are indebted to a naval officer, Commander Wilkes (afterwards Rear-Admiral), who, associated with Lieutenant Eld, transmitted time signals between the two cities. So keen was Wilkes in this matter, and so alive to its importance, that although the telegraph was not completed until the 27th of May, yet, on the 9th of June, Wilkes was exchanging his first signals, completing his work on the 12th. He used two chronometers, each rated to local time, and thus ascertained the difference of time between the two cities, and hence the difference in their longitude; his determination of this difference was only 3-100 second from that subsequently determined by the Coast Survey when more accurate methods had been devised.

Two years later, in October, 1846, time signals were exchanged between the Naval Observatory, in Washington, and the Observatory of the Central High School, in Philadelphia, this being the first use of what has since come to be known as the American telegraphic method of determining differences of longitude. This work was planned under the Coast Survey by Mr. Sears C. Walker, an assistant in that office. The observations were made by Prof. Kendall, in Philadelphia, and Lieutenant Almy, in Washington.

In July and August, 1848, signals were exchanged between the Observatory of Harvard College and a private Observatory in New York. During this work, Prof. Bond, of Harvard, conceived the idea of an automatic circuit interrupter to be worked by the clock used in the observations. He communicated his ideas to the Superintendent of the Coast Survey, and by him was authorised to construct a clock after his plans. This work was not finished until some time in 1850.

In the meantime Mr. Walker, in conversation with Prof. O. M. Mitchell and Dr. John Locke, of Cincinnati, had told them what the Survey desired in the way of an automatic registration apparatus. Both these gentlemen set at work, and Mitchell devised an apparatus which was finally completed in February, 1849. Locke busied himself in the same direction, and twelve days after his talk with Walker he had perfected his apparatus. In this, each of the sixty teeth of a wheel on the seconds arbor of a clock struck the arm of a tilt hammer. When the tooth was in a horizontal position, the other arm of the hammer fell upon a bed of platinum, which was in connection with one pole of a battery, while the fulcrum on which it moved was in connection with the other pole. The circuit was then broken and made at each rising and falling of the hammer. The next step was to connect the clock with some form of registering apparatus, and for this purpose, the ordinary Morse register, with its continuous fillet of paper, was used. On the 17th of November, a little more than three weeks after the idea was first suggested to him, Locke had in operation his clock, registering its beats over the entire line between Cincinnati and Pittsburgh, a distance of more than 400 miles.

This was the first instance in which time signals were delivered *automatically*, by telegraph. As the fillet of paper passed through the register, a continuous record of the seconds was made, with nothing, however, to indicate the beginning of the several minutes; this indication was accomplished by the use of a break circuit key which the observer held in his hand, and pressing at the sixtieth second of each minute caused the registration to cease for three or five seconds as might be desired, thus marking the beginning of the minutes. Presumably Locke was engaged during the following six weeks in perfecting his invention, for it was not until December 30th that he announced to Lieutenant Maury, the Superintendent of the Naval Observatory, what he had accomplished, and offering it not only for the telegraphic determination of longitudes, but also "as useful in a local observatory as a faithful and convenient register of observations." On the 5th of January, 1849, Maury replied in substance as follows: "I regard it as one of the most important inventions of the age. Feelings of professional pride give additional zest and warmth to these congratulations. For ages the problem of longitude has occupied the mind of wise men, and commanded the attention of governments. This discovery of yours is the crowning work in the great problem. Permit me to claim this high honour first for my country, and next for the navy. An American Naval Officer, Capt. Wilkes, was the first to apply the magnetic telegraph to the practical determination of longitude. It greatly lessened labor and refined results. The next and last step has been made by yourself, who also are an ex-officer of the navy. You have, by your invention, eliminated from the problem the errors arising from comparing the face of one clock with that of another, and made it as easy and practicable to divide seconds into hundredths, as before it was to divide minutes into seconds. By your invention you enable the astronomer to make the ticks of his clock here in Washington to be heard wherever the telegraph leads, and you make the clock to divide those seconds into hundredths."

On the same day he addressed a letter to the Secretary of the Navy informing him of Locke's invention and recommending it in the highest terms. This letter was made public, and after some further correspondence it was followed by an invitation from the Secretary to Locke to come to Washington: the subject of an appropriation was discussed, and after much push on Maury's part, the sum of 10,000 dols. was put in the naval bill by the House, for the purchase of a clock on Locke's plan; this came very near being lost in the Senate, but it was saved by the exertions of the friends of the measure and became a law on the 3rd of March. By the provisions of the act the clock was to be erected at the Naval Observatory. This was done, and on the 7th of December, 1849, the clock, with the chronograph attachment, was used for the first time, and proved to be a great advance over the old method, although there was still some difficulty in the matter of accurate registration.

As before stated, in 1850, Professor Bond, of Harvard Observatory, completed his clock for the Coast Survey, and, in addition, invented an improved chronograph, in which the paper was placed upon a revolving cylinder, the driving power of which was so adjusted as to cause one revolution per minute to be made, the record being made by a pen in a continuous spiral line; but, as in Locke's plan of the Morse fillet, there was no means of noting the beginning of each minute automatically. About the same time the cylindrical form was under consideration at Washington, but there were some difficulties which it does not appear were surmounted at this date.

In 1851, the Bond chronograph, with its ingenious driving machinery, known as the spring governor, was taken to England and there exhibited, eliciting much commendation and receiving a gold medal at the Great Exhibition of that year. The Astronomer Royal, of the Greenwich Observatory, in his report for June, 1851, states that he has adopted the plan of "making a galvanic register of transits in the American manner," but the cylindrical chronograph was not adopted until some three years later—a suggestion by Maury during a visit to Greenwich having enabled Sir George Airy to overcome the practical difficulties which were encountered.

During this same year the observatory at Harvard was connected with the various telegraph lines from Boston, as many longitude operations were being carried on for the Coast Survey. In this manner the attention of such portion of the public as were interested in such matters was drawn to the practicability of obtaining accurate time from the observatory, and in many cases regular arrangements were made for the transmission of the signals throughout Massachusetts and some of the other New England

States. Indeed, at present the time service of Cambridge furnishes the chief source of comparison in that section of the country; the observatory of Yale College also possesses such a service, which supplies Connecticut in like manner. The observatory of the Washington University at St. Louis, and that at Alleghany, Pa., also have extensive time service; and there are others covering less ground.

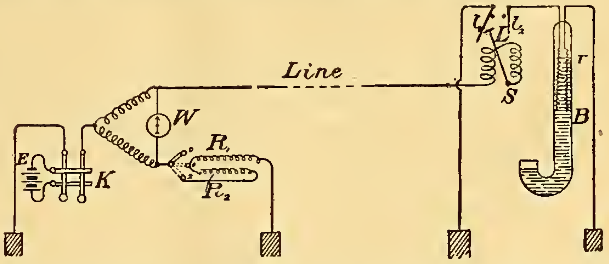
At Washington the Naval Observatory has dropped a time ball since the first occupation of the completed buildings in 1844, following the example set at Greenwich eleven years earlier. At first the dropping was done by hand, upon signal received from the chronometer room; later this signal was sent electrically, and the dropping of the ball was performed automatically by the same signal. This ball served to give the moment of noon not only to the cities of Washington and Georgetown, but also to the Navy Yard and to such vessels as happened to be lying there. No telegraphic signals were transmitted, however, for several years, the Royal Observatory at Greenwich far outstripping us in that respect, as a system of time signals to the important cities and towns of England was in operation as early as 1852. This, of course, was readily accomplished in a country of such small extent, where the difference of any given local time from that of Greenwich is not great; but in our own case, the great extent of longitude and the different local times kept through what was supposed to be the necessity of the case, conspired to prevent the extension of any such system. Local jealousies had also a part to play in the matter, as the railroads running out of Boston would not keep New York time, and *vice versâ*.

With this brief retrospect of the course of events which has made the electrical distribution of time possible, let us return to the subject proper of this essay; and in so doing I beg leave to repeat a portion of the definition with which it began, viz: "By the electrical distribution of time is understood the causing of the instant shown by a timepiece at a central station to be marked by some apparatus prepared to receive the necessary signal at another station in electrical connection with such central station. It is essential, to secure the highest order of accuracy, that the central station shall always be at an astronomical observatory, and preferably one which is able to devote the services of one or more persons to this special duty." In order to a fuller understanding of the functions of an observatory, it will be necessary to call your attention to some of your early instruction in astronomy. The interval between two successive transits, or meridian passages, of the sun, is an apparent solar day; owing to the unequal motion of the earth in its orbit (or, to put the statement in another form, to the apparent unequal motion of the sun in the ecliptic) two successive apparent days are not of the same length. As a constant standard of time is necessary, it has been found essential to assume an imaginary sun moving in the equinoctial (or the plane of the earth's equator) at a uniform rate, which is the mean rate at which the true sun moves in the ecliptic; the interval between two successive transits of this imaginary mean sun is a mean solar day, and in a clock keeping mean time, the hands would (if the clock were correct) point to 12h. 0m. 0s. at the instant of transit, which is known ordinarily as NOON. As a matter of fact, however, the sun is rarely used at observatories for the determination of time, but stars are employed instead; this is done, not only because the tables of the positions of the stars are more accurate, but because several stars can be observed at about the same time and the results deduced from these observations made to serve as checks upon each other. The interval between two successive transits of the same star is called a sidereal day; this interval is constant, and is (like the mean solar day) divided into 24 hours. Each star comes to the meridian at an earlier period than on the day preceding, if the transit be noted by a mean time clock; the difference between a star and a sidereal day is 3m. 56s. 56, and hence the sidereal 0h. is constantly getting ahead of the solar 0h., so that it is always necessary to reduce the *sidereal* time found by the star observations to that used in ordinary life, or to *mean* time. The positions of stars are given in the table by their *declination* (similar to terrestrial latitude) and their *right ascension* (similar to terrestrial longitude); the right ascension of the star being reckoned from the celestial prime meridian, it follows that when any given star crosses the meridian, the sidereal clock should show the time given in the table as the right ascension of such star; the difference between the time actually shown by the clock and this right ascension is the error of the clock; comparing then the time shown by the sidereal clock with that shown by the mean time clock, we find the error of the latter. This is briefly the method followed by all observers, and hence is common to all systems of time signals. We have, then, as essentials of any such system, (1) an instrument for observing the transits of stars; (2) a sidereal clock, and (3) a mean time clock. This mean time clock (like all timepieces) will not run accurately, its rate varying, being sometimes less and sometimes greater; the pendulums of such clocks are generally very well compensated for changes of temperature, but it has been found that the density of the air has a decided influence upon the rate at which the clock runs; when the barometer is high, the clock loses on its rate, gaining when it is low. In order, then, that the time which is sent out over the wires should be correct, it is necessary either to have some arrangement for correcting the standard mean time clock so as to make it correct, or else to have a similar clock which can be likewise corrected; such a clock is known as a transmitter. *(To be continued.)*

An Electrical Barometer.

AT the Annual Soirée of the Royal Society, at Burlington House, there was exhibited a Scheme of an Electric Barometer, the invention of Mr. J. Stephen (Patentee). In the *Electrical Review* of June 22nd the Barometer was very well described, and the description which follows is mainly derived from the pages of our contemporary.

The object of this apparatus is to enable the height of the barometrical column to be ascertained when the instrument is placed at a distance from an observatory. The general idea of the invention is not, we believe, novel, but the means by which it is carried out is decidedly new and ingenious. The principle of the apparatus is as follows, and is shown by the figure.



B is the barometer tube placed at a distance from the observatory station, and connected to the latter by a single line wire. Through the upper end of this tube the wire, or carbon filament, resistances, *r*, are inserted; these resistances dip down into the mercury, which short-circuits them, so that the actual portions of the wires or filaments offering resistance will obviously vary as the column of the mercury rises or falls. To determine, therefore, the height of the column, we have only to measure the resistances, *r*. In actual practice these resistances would measure about five ohms to the inch.

So far the arrangement does not possess any distinctive feature. To measure the exact value of the resistances, *r*, we must, of course, know accurately the value of the "line" resistance, as this must be deducted from the total measured resistance, in order to determine the value of *r*. Now if the line resistance were a constant quantity, there would be no difficulty in determining *r* by a single measurement; but, of course, as is well known, the line resistance constantly varies, and it is the getting over of this point that constitutes the special feature of Mr. Stephen's invention. Connected in circuit with the line is a special form of automatic switch, S′, a form which was described in the No. of the *Electrical Review* for July 30th, 1886, page 115, in connection with an automatic individual telephone call arrangement, also the invention of Mr. Stephen. This switch enables the line current to be diverted at the receiving end of the line from one circuit to another, as required, by causing the line current to pass in one direction or the other. The line current, it will be seen, passes through the magnet coils of the switch, and thence through a polarised armature, and then from the end of this armature to one or other of the two levers, l_1 l_2, according as the lever is over to the left or right; to effect which result the arrangement is such that contact is not broken from one lever until it is made with the other, so that the continuity of the line remains unbroken. The lever, l_2, is connected to the barometer resistances, and the lever l_1, to earth direct.

At the observatory station, a Wheatstone bridge, W, is arranged with a double key, K. The adjustable resistance of the bridge is in two parts, R_1 and R_2. s is a three position switch; in position 0 this switch is disconnected; in position 2 it is connected to resistance R_1, and in position 3 to resistance R_2.

The working of the whole arrangement is as follows:—The switch, s, being in position 0, the left-hand pedal of the key, K, is depressed; this sends a current from the battery, E, direct to line, and actuates the switch, s', so that its armature moves over to the lever, l_1, putting the line direct to earth through the coils of the switch. The hand switch, s, is then moved over to position 1, and balance is obtained on the galvanometer by adjusting R_1; this resistance then will be the resistance of the line wire and the coils of the switch, s'. Switch, s, is then moved back to 0, and the right-hand pedal of the key, K, is depressed. This causes a current to be sent, which moves the armature of s' over to l_2, thus putting the resistances, r, in circuit. Switch s is now moved to 2, and balance is obtained by adjusting R_2. Since R_1 is still in circuit, it is obvious that the resistance, R_2, must be the resistance of r, hence we get the value of r quite independent of the value of the line resistance.

It must be obvious that the whole arrangement is adaptable not only for the measurement of the height of a barometric column, but for thermometers as well, and indeed for several other purposes.

As has already been said the general idea of the invention is not novel. A method was designed by the late Sir W. Siemens which was based upon the movement of a mercurial column varying the existence included in a circuit. Siemens' method, however, demanded the use of two wires. The Lord Advocate, the Right Hon. J. H. A. Macdonald, Q.C., M.P., is also known to have been at work on lines very similar to those followed by Mr. Stephen, but so far as can be seen, the employment of the automatic switch, and the use of the carbon or other high resistance filament inserted in the tube constitute important features in the new plan.

Destructive Fire in Hatton Garden.—Shortly before nine o'clock, on the night of June 7, a fire broke out on the premises numbered 103, Hatton Garden, which extend as far back as Robin Hood Yard. The principal portion of the building is occupied by Mr. C. Jeffreys, shopfitter, and jewellers' show-case maker, and the outbreak seems to have originated among the property in the rear. It was not long before the flames assumed a threatening aspect, and the reflection of the fire attracted thousands of spectators to the scene. Aid was telegraphed for from all parts of B district, and a steamer was sent on from head quarters, Southwark Bridge Road, whence Mr. Simonds, second officer, proceeded to the place. By this time there were two steam engines and a stand pipe at work in Robin Hood Yard, and two steamers in Leather Lane; but for a long time the water applied seemed to produce but little effect on the fire. On one side of the property are Bull Inn Chambers, the blocks of which are thickly populated; and the alarm occasioned by the outbreak caused the utmost consternation among the numerous inmates of those buildings. Mr. A. Levy, stock and share broker, occupied the ground floor at 103, Hatton Garden, and in the early stages of the fire the heat therefrom forced the extensive plate glass front into the street with a fearful crash. The property of Messrs. Jaques and Sons, croquet-set manufacturers, was also much damaged.

American Items.

The New York *Jewelers' Security Alliance* has at the present time a total membership of 741. The offices of the Society are at 170, Broadway.

The New York Standard Watch Company has accepted an order for 10,000 watches to be sent to Europe, all to be delivered by September 1.

Robbins & Appleton, of New York, gave 350 dols. toward Mr. Robbin's portrait, says the Waltham *Tribune*, and the stockholders are subscribing more or less liberally, and if the employes subscribe as is anticipated, the amount will easily be raised. The portrait will cost 1,000 dols. and the frame probably 100 dols. more. It is desired to keep it strictly a watch factory affair. It is to be presented to the city of Waltham.

The recent death of Mr. Charles Dickinson, who held the joint offices of president and treasurer of the Waterbury Watch Co., and who was also one of the directors, necessitated filling the vacancy thereby caused. The remaining directors, having power to act in such emergencies, held a meeting at Waterbury, Conn., on Tuesday, May 1st. Mr. A. S. Chase was elected to fill the vacant directorship and afterward chosen president. Mr. E. L. Bronson was elected treasurer.

Mr. A. S. Chase, the new president of the Waterbury Watch Co., has been a resident of Waterbury for some years. He has long been president of the Waterbury National Bank, and now in addition to that high position, he is likewise president of the Benedict Burnham Mfg. Co. and several other concerns. He is an enterprising, progressive man, with broad ideas and a liberal manner of doing things. He will doubtless be a valuable and a potent addition to the pushing element controlling the watch company.

An unusually neat scheme was put in practical operation in Wahoo, Nebraska, with great success, by a trio of sharpers. The modus operandi was as follows: Mr. A., dressed in the height of style and wearing a fine silk hat, appeared in town, secured a good location, opened a jewelry store and advertised extensively; especially among the farmers. Suddenly Mr. B. arrived, claiming Mr. A. was largely indebted to him for goods purchased, and in support of the claim exhibited a chattel mortgage covering the stock; upon the strength of which he caused the store to be closed, and the stock advertised for sale at auction. The rush to buy was immense. Everybody bit. The stock went off like hot cakes. Mr. A. and Mr. B. quietly departed, leaving their victims to learn wisdom by experience, the jewelry being the very cheapest trash. Neat scheme, and well worked.

Mr. Wills, of the Waltham (Mass.) Watch Factory, has recently completed one of the most elaborate watches ever made. The bottom plate is of striped agate and the top plate and cock of crystal. The wheels are damascened and gilded and the minutes are marked by rubies, while at each hour is set a sapphire. It is enclosed in an 18 carat gold skeleton case.

It is pleasing to hear from one of our prominent clock manufacturers, says the *Jewelers' Weekly*, that the new English Merchandise Marks Act, the substance of which has already been published in the *Weekly*, is proving beneficial to the American clock trade. It seems to have the effect of preventing trashy European imitations from being placed on the market as American clocks, and therefore permits our timepieces to be sold on their merits. John Bull's legislation is not generally constructed with a view to benefiting Columbia's manufacturers, but in this instance he seems to have done them a real service.

The late Mr. Morel Ladeuil.

SOME of the achievements of the late Mr. Morel Ladeuil, whose death took place recently, are recorded in an American contemporary, from which we cull the following: With few advantages in the way of education, and commencing life as a humble workman, he succeeded in gaining a world-wide reputation as one of the greatest artists of his age. Of the early life of this gifted man but little is known beyond the facts that he was a native of Clermont-Ferrand, France, and a pupil of one Antoine Vecht. This Vecht was a silversmith, whose artistic genius caused him to be regarded as a successor to Benvenuto Cellini. He first made his appearance in Paris in the early part of the present century as an imitator of Cellini, and was thence taken to London by John Mortimer, one of the founders of the well-known house of Storr & Mortimer.

The small vases and cups produced by Vecht as the work of Cellini, and sold at a great price by the antique dealers of Paris, are charming—indeed, in the opinion of some judges, they are the finest work of this artist. In England he was enabled to work on original conceptions, which, while they dignified silver work and raised it to the level of art, never paid the producers except in fame or as an advertisement. He had many pupils and founded a school. Among his pupils were the well-known brothers A. F. and J. T. Fannière, of Paris, whose works in silver have been much admired wherever exhibited.

Whether Ladeuil was connected with Vecht in Paris is not known for certain, although there is an impression prevailing that he was. It is, however, known that he was acting as an assistant to him in London, his duties being at first confined to mere mechanical work. Vecht, however, seems to have been attracted by his young compatriot's brightness and intelligence, and gave him instructions in the higher branches of silversmithing. He was an apt and willing pupil, and made such rapid progress, that in a very short time he was the equal of his master in the ability to produce designs which were original, striking and artistic.

The work of the young artist soon attracted the attention of Messrs. Elkington & Co., London, one of the oldest-established and best known firms of silversmiths in the world, and he was engaged by them as a member of their staff of designers, which contained some of the best artists of Europe, under the leadership of the celebrated Willm.

Here he worked enthusiastically but quietly for a number of years, unknown to fame, but thoroughly appreciated by his employers, and producing many beautiful designs.

Shortly after the opening of the great London International Exhibition of 1862, Ladeuil woke up one morning to find himself famous. Among the articles of silverware exhibited by Elkington & Co., was a silver table or tazza in repoussée work, the exquisite beauty of which caused many enquiries as to the designer. His identity was not long a secret, and from that time his position in the world of art was assured.

The design of this table was called "Night and Dreamland." At the foot of it, reclining on a bank, were three figures sleeping —a minstrel, a soldier and a farmer—who are under the influence of a goddess, standing above them and represented in the act of strewing poppies around. The circle of figures on the surface of the table is supposed to embody the dreams of these sleepers. This exquisite piece of work gained for Ladeuil the first prize for silverware at the exhibition, and it was afterwards purchased by the town of Birmingham as a wedding present for the Princess of Wales.

At the same exhibition were shown a tankard, vase and dish, handsomely chased by Ladeuil, which excited much favourable comment, and added not a little to his reputation as an artist.

At every great exhibition of Europe held since that time, productions of Morel Ladeuil's artistic brain and cunning hand have excited the admiration of connoisseurs and won for him fresh renown. His Helicon vase was exhibited by Messrs. Elkington & Co. at London, Paris and Vienna, winning gold medals in each of these capitals.

The greatest work of his life, however, was the Milton shield, exhibited at the Paris Exposition of 1867. There is a general impression that it was the best work shown at that most memorable exhibition. It gained for Ladeuil a gold medal, and while he had occupied a high place previously, this work elevated him in the ranks of the great artists of the epoch.

The Milton shield is one of the grandest works of its class that has ever been produced in any age or country. In conception it is admirable and in execution perfect. It is of repoussée work in iron and silver, with damascene work (or engraved ornament inlaid with gold wire) introduced. The designs are intended to illustrate the chief incidents of Milton's poem, "Paradise Lost." The circular plaque in the centre represents Adam and Eve in Paradise; on the left are depicted the hosts of heaven, and on the right the fall of the rebellious angels. Below is St. Michael's victory over Satan.

Similar in style to the Milton shield was Ladeuil's Bunyan shield. It, too, was of iron and silver repoussée work, and represented the history of Christian as related in the "Pilgrim's Progress." This work not only gained for the artist another gold medal, but also a prize which, in the eyes of a Frenchman, is the greatest that can be obtained—the cross of the Legion of Honour.

Ladeuil continued in the employ of Messrs Elkington & Co., each year seeing new and wonderful creations produced by his master hand, until 1884, when the long years of laborious application to his beloved work had so undermined his health that he resigned his position and went to Boulogne, where he passed the remainder of his days in retirement. Even here, however, he could not altogether abandon the work which had become a second nature to him, and continued to labour in a desultory manner whenever his health would permit, the result being three bas-relievos, which will be exhibited at this year's *Salon*. They will doubtless not be unworthy of the creator of such masterpieces as the Princess of Wales' tazza, the Helicon vase and the Milton shield.

The New Clock of St. Paul's, Wednesbury.

WE have been favoured by the makers with a description of the Church Clock in the Tower of St. Paul's Church, Wednesbury, which was started by the Mayor of the town, on Sunday, June 24, that will interest our readers. This clock was made by Messrs. Evans and Sons, of Soho Clock Factory, Handsworth, and is constructed as follows:—the bed is of cast-iron, six feet long, all wheels and bushes are of gun-metal, the main wheels are sixteen inches in diameter and 1½ inch wide, the pinions are cut out of solid cast-steel, the escapement is Denison's double three legged gravity, compensation pendulum of iron and zinc tubes and steel rod, carrying a ball weighing two cwt.; the quarters' cam barrel is made on a new and improved principle, consisting of iron rings, into which the cams fit for lifting the hammers, and can be adjusted in any way required. There are many recent improvements in the construction of this clock, all cams and levers being of cast-steel, hardened and tempered. Any wheel or pinion can be taken out of the clock separately, the bushes being screwed in at both ends; there are over 900 pieces in the clock and dial work. Clock chimes all the quarters, strikes hours on a ton bell, and shows time on four large dials.

The above clock should have been finished in 1887, Jubilee year, but Messrs. Evans & Sons having so many large clocks ordered, the Wednesbury clock and one for Freemantle Town Hall, West Australia, same construction, had to stand over until 1888. The Jubilee year gave a great impetus to the clock making industry, and this firm sent out large turret clocks for the trade, among which were two for London, three for Yorkshire, three for Lancashire, three for Worcestershire, two for Gloucestershire, and one for Aberdeen.

A few Hints on repairing Diamond Ornaments.

A VERY important and careful job is this branch of the jeweller's art; it requires in fact the ability and experience of the "jeweller proper," a special qualification, differing in a number of points from that of the goldsmith.

The diamond mounter must be a man of infinite resource—a good judge of a hard or soft stone (diamonds vary in this respect, some of the cape stones chipping very easily if too much pressure is used in the setting of them). He must be able to mount and set his own work, an ability that the goldsmith does not possess, setting being a separate item in this branch of the trade. He must also possess another qualification, a "light hand" or touch. This is very essential, as the great aim of the diamond mounter is to show off the stones to the best advantage, without their being surrounded by too much silver or gold as the case may be. In order to do this with success, the mount has to be as light as possible, and to bring this to a safely finished state requires the dexterous and light touch, the keen eye for construction, and by these means to produce the appearance of lightness and yet to preserve the necessary amount of rigidity to make the jewel wearable. All these conditions combine to make the path of the repairer very difficult and trying, taxing both the patience and ingenuity of the workman to the utmost. It is scarcely necessary to add, that there is no high road to perfection in an art so full of detail as the one before us, but at the same time it is possible to mark out some of the dangerous points at which the novice is likely to stumble, and a few clear and simple remedies for failures may be suggested, which, by a careful and patient application, will ultimately lead to success.

It is an old proverb "that there is more learned by doing things wrong than by doing them right;" the virtue of this is somewhat of a negative character, but doubtless you must know which is the wrong way as well as the right one.

In the case of supplying a part to a jewel where a piece has been broken away and lost, if the surrounding settings have not been injured by the accident the job is comparatively easy; but, generally speaking, the breaking away of an ornament causes the surrounding parts to get injured more or less, and if the injury is not a conspicuous one it is liable to be overlooked by the repairer; for instance—a strain upon some of the setting will cause loose stones, which means, very soon, *lost stones*, if the setting is not well examined and repaired where so strained. In some instances it will be found that the grains at the corners of the setter's cutting have been broken away. In that case there is nothing for it but to supply fresh ones, and it is of no use to simply solder a shot or bead in the place—this is often done—as it has no practical value and will not withstand any pressure from the back. The only certain method is to drill a hole into the corner of setting where the grain has been broken away and insert a piece of silver wire; soft solder this in (by the method explained in my last, "Repairing Coloured Gold Work") and afterwards make the end of the wire into a shot or "grain," by pressing it over the stone and forming it with the graining tool. This method can be applied to any number of missing grains, and will be a permanent and workmanlike job when finished, making the stone quite as secure as in new work, and equal in appearance if carefully executed. The same process applies to the replacing of old ornaments or parts that have been lost by new ones. The new part when made should have a wire peg—or more than one if possible—hard soldered to it in a convenient place, and a hole drilled into the old work to receive each wire, which can be firmly soldered into position and thus complete the design. By this means the workman is enabled to restore the setting of the other stones, and if the soldering is done carefully, the other parts of the work will not take any deeper oxide from the heat than can be readily removed by the rouge brush and threads.

In the case of hard soldering it is advisable not to attempt it without first removing all the stones near enough to be affected by the heat, for although some of the good old Brazilian cut diamonds will stand a considerable amount of heat without injury, yet it is too great a risk to attempt to hard solder with the stones in the settings; and if any grains break off in taking out the stones, replace them by drilling and inserting wire pegs as described above, but in this case they can be hard soldered in with silver solder, and this will enable the re-setting to be done with satisfaction. After the hard soldering the oxide left upon the surface must be reduced by boiling in a weak solution of nitric acid and water (about one of acid to four of water): this will not affect any stones that are left in the work, unless any of them are backed and foiled, in which case they should have been removed before soldering or the chances are that they have been spoiled by the heat, even if they are not adjacent to the soldering place, and the "boil" or grey surface thus produced must be carefully polished again and "rouged up," and the setting cut up bright with the scorper.

In the case of claw work, if one or more points of a claw are broken away, it is generally better to supply new ones than lower the remaining claws to the depth of the broken ones, as it spoils the outline of the claw, and gives the stone the appearance of being buried; if a number of points are gone it would be the most expeditious to make another claw complete, but if only one point is destroyed it is possible to fit another to the work by gapping into the side of claw with a piercing saw or gapping file, and soldering into the slit thus made, a new point a little thicker than the remaining ones; this will enable the workman to file it to the pattern and proportion of the old ones, and when polished and properly set, will be as firm as the other parts, and the repair will not be noticeable.

A. O.

The Recent Discovery of Pearls in Ireland.

PEARLS have been discovered, it is just announced, in several of the Irish rivers, and the chairman of the Omagh Town Commissioners has come to London with a packet of the gems which have been found in the fresh-water mussels of county Tyrone. They are asserted to be of fine quality, and to abound in the stretches of water where the pearl-bearing mussels have now been discovered. Centuries ago, according to the *Morning Post*, the fishermen of Ireland obtained many a pearl from their loughs and lakes. Some of the most beautiful gems ever found in the three kingdoms come from the waters of Donegal and Mayo and other districts. As far back as 1688 that ardent and enthusiastic collector of gems, Sir Robert Reading, addressed a communication to the Royal Society of Great Britain on the structure, quality, colour and value of the pearls of Ireland. As a matter of fact, indeed the statement that pearls are to be found in the rivers of county Tyrone is no more new than Mr. Morgan's discovery that gold exists in Wales. The find may, however, stimulate further search in the mussel-bearing waters of Ireland. Once on a time British pearls were far more highly esteemed than those obtained from the Eastern lands, which many suppose to be the true home of the gem. The pearls of the Persian Gulf have a yellow tinge, and the specimens obtained from Ceylon are characterised by a dead white lustre; but those from Britain had a lovely pink tint that was peculiarly pleasing to the connoisseurs of the ancient world. The river Irt, in Cumberland, was famous for its pearls. Wales has always been noted for its pearl mussels, which the Welsh call "deluge shells," because they are supposed to have been left behind when Noah's flood subsided on the earth. Many very fine pearls have been obtained from the river Conway in North Wales. In the Middle Ages the fashion on the Continent was all for Scotch pearls. The Tay and the Isla were the principal seats of the Scotch pearl fisheries, and the produce was often valued as high as £10,000 in a single year. As the fashion fell off, the quantity of Scotch pearls brought to market in London fell off also, so that between the years 1761 and 1764 the total value of the gems reaching the metropolis was not more than £10,000 altogether. There was a great revival of the pearl fishing industry a few years ago in Scotland, due to the efforts of a German traveller whose attention was drawn to the elegance and beautiful tint of a few of the gems he found in the hands of the local fisher-folk. At the time only a single pearl fisher was found in all Scotland, so greatly had the industry fallen off; but before this enterprising foreigner had left the district he had spread among the people a knowledge of the hidden treasures often concealed in the river mussels abounding in many of the Scotch waters. Between 1861 and 1864 the value of Scotch pearls harvested was estimated at over £40,000. Pearl fishing, as followed in the rivers of Scotland—the Tay, Don, Teith, Forth, Ythan, Doon, Spey and Earn—is a very simple matter indeed. The fisher is content if one mussel out of forty yields a good pearl. Often a dozen pearls in succession are not commercially valuable owing to bad colour or shape. Speaking roughly, about one pearl in every dozen discovered yields a profit, and one pearl, as a rule, is found in every forty shells: so that 480 mussels must be got and opened before one paying pearl delights the eye of the finder. Still, it must be remembered the fishing involves no outlay, can be pursued by women and children, and at any odd times when no other employment offers.

Bankruptcy of a Glasgow Jeweller.—In Sheriff Spen's chambers, on the 20th ult., William Boyd, sole partner of the firm of William Boyd & Son, wholesale jewellers, 54, St. Enoch Square, was examined in bankruptcy. The bankrupt stated that when he commenced business in St. Enoch Square, he had not a shilling of capital. He obtained goods from parties who, he understood, knew his position. None of the creditors from whom he bought goods asked him if he had any capital. He did fairly well after starting in St. Enoch Square. His books, owing to carelessness and inability, were very badly kept. About the beginning of March last he found he could no longer carry on business. At that time his stock amounted to £216 8s. 4d. He then made an offer of a composition of 7s. 6d. per £. He proposed to pay that by assistance from his friends, but when he applied he was refused. His liabilities amounted to £4,075 19s. 0½d., and his assets to £2,698 9s. 1d., showing a deficiency of £1,377 9s. 11½d. He could only account for the deficiency in a general way, principally, he thought, from loss in goods and pledges. This closed the examination, and the diet was afterwards adjourned.

Prosecution under the Merchandise Marks Act.—The first conviction under the Merchandise Marks Act in Sheffield has been secured at the instance of the Federated Trades Council, an association comprised of the skilled workmen in the staple trades of the district. The case was heard before the Stipendiary, and the defendant was Mr. John Baker, trading as John Baker and Co., at Phœnix Works, Wheeldon Street. The alleged offence was the applying of a false mark of origin to certain scissors. Purchase was made of the defendant of a card of nail scissors, which bore at the foot John Baker and Co., manufacturers, Sheffield, but they were found to be German scissors. A large number of witnesses had been summoned, but on the case being called on the defendant pleaded guilty. It was stated that the German scissors sold by the defendant were worth about 8s. 6d. per dozen, whilst similar patterns of Sheffield scissors fetched 48s., but that the former were dear even at 8s. 6d. For the defence it was contended that the words John Baker and Co., Sheffield, on the card were not intended to convey the idea that the scissors were made in Sheffield, but merely as an advertisement for the factor. The Stipendiary held that the defendant had not substantiated his plea that there was no intent to defraud, and imposed a fine of £5 and costs, the latter being very heavy. In the course of his judgment the Magistrate said that even if the dealer who bought from Mr. Baker was not deceived, that would not relieve the defendant. The Act was framed in the interests of the retail purchaser, and there could be no doubt, that if he saw the card he would conclude that the scissors were made by the person whose name was there as manufacturer. The defendant's firm is in no way connected with another firm of the same name, John Baker and Son.

The Swiss Watch Trade in the English Market.

CONSUL VERNET, in his official report, under the heading "Horology," says:—The reports which we receive do not seem to indicate improvement in this branch. There appear to be imported and sold many very low-priced keyless watches, destined to meet the competition of the "Waterbury," but it is doubtful if this class of watches would do much honour to the Swiss name, and it seems impossible that their manufacture can be truly profitable.

It does not appear that, notwithstanding an active claim, the competition of the "Waltham" watches will be felt much more this year than others; on the other hand it seems that, in the Australian colonies, the sale of Swiss watches is very dull, and that there are stocks that will suffice for many years.

It is yet too soon to judge of the influence the new law, called the Merchandise Marks Act, which was put in force January 1, 1888, will be able to exercise upon the Swiss watch of good quality. It was at the beginning applied with a vigour which caused many complaints, but, as far as concerns Swiss goods, the concessions obtained from the Customs authorities, of which the *Feuille Officielle Suisse du Commerce* has summarised the principal results, will, I hope, render impossible the renewal of the well-known incidents which occurred during the first weeks of the year.

The English trader greatly appreciates the institution of the English control, but it is to be hoped that he will accustom himself to the new Swiss marking, especially if he find that it covers high-class goods.

An American View of the English Watch Trade.

An Interview with Mr. George Merritt, *of the American Waterbury Co.*

I MET George Merritt a few days after he reached New York, says a correspondent of the "American Jeweler"; he had been absent ten weeks and got back here May 1 or thereabouts. He had gone from London to Geneva, struck the historical streak of foul weather in the former and the streak of equally foul water in the latter.

"How is the watch trade abroad?" I asked.

"You know," Mr. Merritt replied, "that a factory is building at Prescot, a small town near Liverpool, for the manufacture of cheap watches. That has been told so often in the papers that I presume every one knows it. It has been forced upon them by the growing demand for low priced watches, a demand that has been more nearly answered by those made in America than by any the English themselves can devise. There is a considerable trade done and to be done in Great Britain. The people there, with their universal desire for improvement in personal appearance and accomplishments, are disposed to indulge in luxuries such as a watch is generally believed to be. The British makers have never undertaken to produce watches complete at Prescot; they have made the movements in one place and the case in another. Nor has machinery been utilised to any extent: the comparatively old fashion process of making them by hand has prevailed for so long a time that the Englishman finds it difficult to grow out of the custom. He finds now, however, that it is a necessity if he has any desire to keep up with the times, or with the time, properly speaking.

"The Mr. Hewitt who was sent over here to investigate the manner of our manufacture, was received with considerable courtesy I imagine. I know he was afforded all the privileges of our factory, and gathered a mass of information on the watch subject, that I hope will be an aid in the rough experience before him. For you can depend upon it the roughness will far exceed all the other qualities. Conducting a successful factory is one thing and establishing a factory in the face of vigorous and resourceful opposition is another. It will be at least two years before that or any other factory can be equipped and put in running order, and if it is done in two years it will be remarkably quick. And what do you suppose the companies already in existence will do in that time ? "

I suggested that they might sit around and wait for the "other fellow" to catch up, but Mr. Merritt's expression disabused my mind of any such idea.

"The other concerns," he went on, "will boom their own business for all it's worth, and if they are ahead now you may rely upon it they will be so far ahead when the Prescot or any other factory gets under way that the possibility of competition will be barred out."

The Royal Scottish Society of Arts.

LIST OF PRIZE SUBJECTS FOR SESSION 1888—9.

THE Royal Scottish Society of Arts proposes to award prizes of different values, of £30 and under, in gold or silver medals, silver plate or money, for approved communications, *whether previously published or patented or not*, submitted to the Society by Fellows or others, relative to inventions, discoveries and improvements in the *Mechanical* and *Chemical* Arts in general, and in their relation to the Fine Arts ; and also to means by which the *natural productions* of the country may be made more available.

Amongst the prizes to be awarded are :—

The Keith Prize, value £30—" For some important Invention, Improvement or Discovery in the Useful Arts, which shall be primarily submitted to the Society during the Session."

The Hepburn Biennial Prize, value about £12—For such Inventions or Communications submitted to the Society as shall be approved by the Society, or by their Prize Committee."

The Makdougall-Brisbane Biennial Prize, value £10—"To the Authors or Inventors of Communications of Merit which shall be approved by the Society, or its Committee, and judged by them worthy of such distinction."

The Reid or Auld Prizes—For the first, second and third best models of "Anything new in the Art of Clock or Watchmaking, by Journeymen or Master Watch and Clock Makers." If these should be considered worthy of prizes, the year's interest of the Reid and Auld Bequest, being about Seven Guineas, be divided among them in such proportions as the Prize Committee shall fix, according to merit. To such as deserve it, the Society may add to the amount of the prize out of its general funds.

General Observations and Directions for Preparing and Lodging Communications.

The descriptions of the various inventions, &c., must be *full* and *distinct;* be legibly written on *Foolscap* paper, leaving margins at least one-inch-and-a-half broad, on *both sides of each page*, so as to allow of their being bound up in volumes, and when necessary, be accompanied by *Specimens*, *Drawings* or *Models*. All drawings to be on *Imperial* drawing paper, unless a larger sheet be requisite. The drawings to be in *bold* lines, not less than a-quarter-of-an-inch broad, or *strongly coloured*, so as to be easily seen at about the distance of 30 ft. when hung up in the hall, and the letters or figures of reference to be at least one-and-a-half inches long. When necessary, smaller and more minutely detailed drawings should accompany the larger ones, for the use of the Committee, having the same letters of reference. Short abstracts must accompany the papers.

The Society shall be at liberty to publish in their *Transactions* copies or abstracts of all papers submitted to them. All models, drawings, &c., for which prizes are given, shall be held to be the property of the Society, but the value of the model, if retained, will be separately allowed for.

Communications, models, &c., are to be addressed to the Secretary, 117, George Street, Edinburgh, postage or carriage paid. Communications lodged after March 1 may not be read or reported on till the following Session.

By order of the Society,
EDWARD SANG, *Secretary.*

Legal.

WOLFF *v.* GEORGE ATTENBOROUGH & SON.

THIS action was tried in the Queen's Bench Division before Mr. Justice Day without a Jury, on the 15th ult.

Mr. Jelf, Q.C., and Mr. J. Watson were counsel for the plaintiff ; and Mr. J. F. Clerk, instructed by Messrs. J. and C. Attenborough, appeared for the defendants.

The facts were practically undisputed, and were as follows :—In May, 1887, the plaintiff intrusted one Warwick with a diamond pendant of the alleged value of £152. Warwick had the pendant on approbation, or on sale or return, which the Judge said he considered to mean one and the same thing. Warwick handed the pendant to a person named Juba Kennerley, who said he could find a customer for it, and he had authority from Warwick to sell to that customer. On the same day Kennerley sent his clerk to pawn the pendant with the defendants, who advanced £50 upon it. Warwick afterwards prosecuted Kennerley for stealing the pendant, and he was committed for trial, but afterwards absconded from his bail, and has ever since remained abroad. The bail paid Warwick a substantial sum of money, some part of which was applied by him in redeeming other goods pledged by him in a similar way, but the pendant was not redeemed. Warwick afterwards became bankrupt.

On behalf of the defendants, Mr. Clerk contended that Warwick, by entrusting Kennerley with the pendant for purposes of sale, had enabled him to make a good title to the defendants under the Factors' Acts : that by so doing, Warwick had rendered it impossible for himself to return the pendant to the plaintiff, and must therefore be taken to have elected not to return it. He cited two cases, in one of which the facts were almost exactly the same as in the present case, and it had there been decided that the person who had goods on approbation was responsible to the original vendor for the price, although the goods had been fraudulently obtained from him and pledged without his authority.

Mr. Justice Day, in giving judgment, said that the case was one of considerable importance, and proper to be taken to the Court of Appeal. He fully appreciated Mr. Clerk's argument, which he had put very clearly and succinctly, but in his opinion the plaintiff was entitled to judgment. Under the contract of sale or return the property in the goods did not pass to the purchaser until he had elected that it should pass, or until he had done some act which a jury might think showed that he had intended to accept the goods, or until he voluntarily allowed such a time to elapse without returning them as would, according to the custom of the trade, disentitle him to return them. In the present case there was no evidence that Warwick had ever elected to keep the pendant, and in fact he had several times written to the plaintiff to say he would return it as soon as it was in his power to do so. Probably the defendants would have had a good defence under the Factors' Acts to any action by Warwick, but it did not follow that they had a defence as against the the present plaintiff. Whatever the Court of Appeal might think about the case if it were taken there, he felt bound to give judgment for the plaintiff, with costs.

DRUIFF *v.* KEESON AND ANOTHER.

This was an action for libel last month by Mr. Samuel Druiff, trading as Herbert and Godfrey, a wholesale jeweller, carrying on business at Ashford, against Mr. Alfred Keeson, the proprietor, and Messrs. Keeson, the printers and publishers of the *Pawnbrokers' Gazette and Trade Circular*, published in London. The Defendants admitted the publication of the words complained of, but pleaded justification.—Mr. Lockwood, Q.C., Dr. Blake Odgers, and Mr. E. H. Cannot were Counsel for the Plaintiff ; Mr. Jelf, Q.C., Mr. J. F. Clerk, and Mr. J. Harvey Murphy were for the Defendants. The libels occurred in letters which appeared in the Defendants' paper in July. Two were written by Robert Looney, of West

Hartlepool, which the Plaintiff said referred to him, and imputed to him sharp practice and dishonest dealing in the conduct of his business and in transactions with customers. One of the passages complained of was this : "If there is anything more than another which makes a trade paper specially useful it is the opportunity which it gives, amongst other matters, of circulating information relative to traders, whose capital mainly consists of an unlimited quantity of cheek, combined with a specious manner of address." The business of the Plaintiff including dealing in spectacles, and the same writer said : "A flood of letters from all parts of the country has come to me, showing that scores of pawnbrokers, as wide apart as Middlesex and the county of Durham, have been victimised by the generous donors of optometers and gratuitous advertisements." The Plaintiff complained that the libels imputed to him, amongst other things, that he made use of testimonials which were not genuine. In the witness-box he denied that there was any foundation whatever for any of the imputations cast upon him in the letters. He was cross-examined at great length by Mr. Jelf as to the course of his business and various transactions connected with it.—Evidence was given by Mr. Looney and other witnesses in support of allegations to the effect that the Plaintiff had induced people to become agents, and then sought to make them responsible as principals, and that he had sought to make people liable for larger orders than they had given.—The Judge, Mr. Justice Day held that the justification was fully made out, and gave judgment for the Defendant with costs.—On the application of the Defendants' Counsel he ordered certain documents in the case to be impounded, having previously expressed an opinion that in consequence of facts which had transpired the matter ought to go further.

Applications for Letters Patent.

The following List of Patents has been compiled especially for *The Watchmaker, Jeweller and Silversmith*, by Messrs. W. P. Thompson & Boult. Patent Agents, of 323, High Holborn, London, W.C.; Newcastle Chambers, Angel Row, Nottingham ; and 6, Lord Street, Liverpool.

7,413. George Mason, Birmingham, for "Improvements in studs, solitaires, and similar articles." Dated May 19, 1888.

7,465. Joseph Walker, Birmingham, for "Improvements in the manufacture of certain parts of brooches, lockets, and other articles of jewellery." Dated May 19, 1888.

7,623. John Edward Bingham, Sheffield, for "An improved substitute for decorative gold and silver lace." Dated May 24, 1888.

7,650. Mdds Peter Hardt, a communication from C. C. F. T. Hahn, Germany, for "Improvements in so-called portable watchmen's time detectors." Dated May 24. 1888.

7,706. William Brown, Birmingham, for "An improvement in scarf rings." Dated May 26, 1888.

7,748. Louis Hoppe and Günther Hoppe, London, for "An electric motor for clocks, watches, and other similar apparatus." Dated May 26, 1888.

7,862. Albert Lyman Parcelle, London, for "Improvements in clocks." (Complete specification.) Dated May 29, 1888.

7,867. William Crookes, London, for "Improvements in the treatment of auriferous ores. and in the revivification of the materials used in such treatment." (Complete specification.) Dated May 29, 1888.

7,993. Friedrich Faller, London, for "Improvements relating to clocks." Dated May 31, 1888.

8,063. Edwin Cave Allan, Glasgow, for "Improvements in or connected with sleeve links or solitaires and such like dress fasteners." Dated June 1, 1888.

8,109. Adolf Merkelbach, London. for "Improvements in watches." Dated June 4, 1888.

8,303. W. F. Donkin, a communication from R. Donkin, New Zealand, for "Improvements in the amalgamation of gold and other ores, and in apparatus employed therein." Dated June 6, 1888.

8,311. Arthur Johnson Smith, Birmingham, for "Bouquet brooches." Dated June 7, 1888.

8,332. William Phillips Thompson, a communication from H. F. Julian, South Africa, for "Improvements in or related to the treatment of ores for facilitating the extraction and recovery therefrom of gold and silver, and in apparatus therefor." Dated June 7, 1888.

8,341. Carl August Herzog, London, for "An improved method of converting keyless movement watches into bezel winding watches." (Complete specification.) Dated June 7, 1888.

8,427. John Erskine Guild. a communication from D. R. S. Galbraith, New Zealand. for "Improvements in the extraction of the precious metals from ores of the same, or from other materials containing precious metal, and in the apparatus employed therein." Dated June 8, 1888.

8,637. Albert Lyman Parcelle, United States, for "Improvements in electric clocks." (Complete specification.) Dated June 12, 1888.

8,639. Amedée Gigon, London, for "Improvements in watches and clocks." Dated June 12, 1888.

8,754. John Lorrimer Corbett, Glasgow, for "Improvements in clocks, watches, and chronometers." Dated June 15, 1888.

9,078. Harry Edward Webb, London, for "An improved mainspring winder for coiling mainsprings for clocks, watches, and other machines." Dated June 21, 1888.

Recent American Patents.

Alloy. H. Ostermann and A. Prip	382,826
Alloy. H. Ostermann and A. Prip, Switzerland	382,827
Detachable Button. W. W. Covell	383,441
Die for making Watch Cases, &c. Frederick Ecaubert ...	382,517
Electric Alarm Clock. E. J. Coley	383,439
Eyeglasses. Amelia Kahn	382,987
Eyeglasses. W. S. Wells	383,004
Initial Finger Ring. W. R. Dutemple	382,758
Lace Pin or Brooch. E. D. Ganter	383,719
Machine for making Watch Pendants. A. Stainacke	383,326
Manufacture of Gold-plated Wire Stock for Jewellery. J. S. Palmer	383,240
Method of preparing Hollow Stock for Jewellery. J. S. Palmer	383,238
Music Box. L. Campicke, Switzerland	382,292
Music Box. E. F. Jaccard, Switzerland	382,879
Musical Box. E. Fornachon, Switzerland	382,080
Nose Guard for Eyeglasses. W. S. Wells	382,848
Open Ring. J. Daniels	382,953
Pencil. O. Mussinan	382,488
Pendulum for Clocks. A. L. Parcelle	383,539
Plate for shaving Gold-plated Shells, &c. J. S. Palmer ...	383,239
Plate for the manufacture of Plated Wire Stock. J. S. Palmer	383,241
Process of Ornamenting Metal Surfaces. D. W. Parker ...	382,661
Repeating Watch. H. O. Stauffer, Switzerland	383,256
Sleeve Button. O. T. Moock and W. L. Headly	382,485
Split Seconds Stop Watch. C. H. Meylan...	383,749
Stem Winding and Setting Watch. W. H. Stevens	383,673
Stop Watch. E. Kuhn	383,059
Striking Watch. J. Walzer, Switzerland	383,260
Watch Case Pendant. H. Gerber, Switzerland	383,219
Watch Chain Attachment. H. M. Stroud...	382,627

A printed copy of the specifications and drawing of any patent in the American list, also of any American patent issued since 1866, will be furnished from this office for 2s. 6d. In ordering, please state the number and date of the patent required, and remit to J. Truslove, Office of *The Watchmaker, Jeweller and Silversmith*, 7, St. Paul's Churchyard, E.C.

Correspondence.

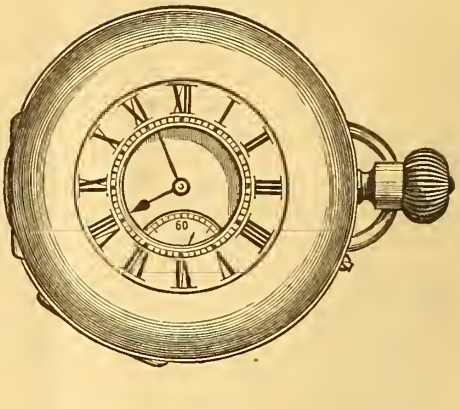
All Letters for Publication to be addressed to the Editor *of* The Watchmaker, Jeweller and Silversmith, *7, St. Paul's Churchyard, E.C.*

All communications must bear the name and address of the sender. not necessarily for publication, but as a guarantee of good faith.

To the Editor of *The Watchmaker, Jeweller and Silversmith.*

Mr. Editor,—I find that in many towns, jewellers are advertising their watches as "Levers:" "This Lever, &c.," so much ; although it is Swiss or foreign watches to which this designation is applied. In my opinion, in the face of the Marks Act, this is illegal, and misleading, as the public generally speaking are under the impression that a Lever is an English watch, and buy accordingly, and it is only fair that both the English watchmaker and the public should have the benefit of plain and straightforward dealing, which the Act intended to bring about. I do not think any one desires to interfere with Free Trade, or the sale of foreign watches ; but we certainly do wish watches and goods sold under right and proper terms and expressions.

Yours truly,
A. E.



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THE BUTTS, COVENTRY.

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(THE PUBLISHERS OF THIS JOURNAL),
Are prepared to undertake the PUBLISHING of any WORKS on the
WATCHMAKING, JEWELLERY OR SILVERSMITHS' TRADES.

SPECIAL FACILITIES FOR PUSHING THE SALE OF ANY BOOKS TAKEN UP.
PARTICULARS ON APPLICATION.

7, ST. PAUL'S CHURCHYARD, LONDON, E.C.

Gazette.

PARTNERSHIPS DISSOLVED.

A. & G. Hickman, Amwell Street, Clerkenwell, manufacturing jewellers. G. H. Taylor & Bro., Sheffield, cutlery manufacturers. Taylor & Harrison, Hill's Place, Oxford Street, jewellers. Burge & Warren, Kirby Street, Hatton Garden, vulcanite manufacturers. C. & G. Lorberg, High Street, Kensington, and Brompton Road, cutlers.

THE BANKRUPTCY ACT, 1883.

RECEIVING ORDERS.

To surrender in the Country.—Robert John Morgan, Exeter, watchmaker. George Hudson, Hastings and St. Leonards, jeweller. M. W. Dunscombe, Bristol, optician.

PUBLIC EXAMINATIONS.

In London.—G. Cook, Goswell Road, and elsewhere, watchmaker: June 27, at 12.

In the Country.—R. J. Morgan, Exeter, watchmaker; July 5, at 10.30.

ADJUDICATION.

In the Country.—R. J. Morgan, Exeter, watchmaker.

NOTICES OF DIVIDENDS.

In London.—E. C. Manico (trading as E. C. Manico & Co.), Houndsditch and Sheffield, cutlery manufacturer; 5*s.*, composition; any day (except Saturday), Chief Official Receiver, 33, Carey Street. A. Paillard (trading as A. Paillard & Co.), Holborn Viaduct, musical instrument importer; 3¾*d.*, first and final; any day (except Saturday), Chief Official Receiver, 33, Carey Street.

In the Country.—J. Fletcher, Birmingham, jeweller; 2*s.* 9½*d.*, first and final; any Thursday, Fisher & Randle, Birmingham.

Buyers' Guide.

The Sheffield Smelting Company, Sheffield, *Sell* Gold and Silver (pure and alloyed). *Buy* all materials containing Gold and Silver.

Jones, E. A., Wholesale Manufacturer of Whitby Jet Ornaments. A Large Assortment of the Newest Patterns always in Stock. Export Orders promptly executed. Persons not having an account open will avoid delay by forwarding a reference with their order. Customers' Matchings and Repairs with despatch. 93, Hatton Garden, London, E.C.

W. Scott Hayward & Co., 59, Deansgate, and Barton Arcade, Manchester. Wholesale Jet Ornament Manufacturers, Jet Cameo Cutters and Rough Jet Merchants. Approval parcels sent on receipt of order, if accompanied with trade references. Repairs and matchings executed on the day received. Works: Manchester and Whitby. Agents at Liverpool, Leipzig and Paris.

S. Ockenden, Chronometer and Watch Jobber to the Trade, 155, Goswell Road, London. Staffs, Pinions, Cylinders, Conversions, &c. Price list on application.

T. & J. Bragg, Vittoria Street, Birmingham. Goldsmiths, Jewellers Diamond Mounters, Art Silversmiths. *By special appointment to Her Majesty the Queen.* Royal and other orders, and Insignia, Mayoral Chains Maces, Corporate Seals, Caskets, Keys, Swords. Masonic Jewellers.

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WINDOW ATTRACTION.—NIGGER SWINGING NEGRESS ON TOP OF CLOCK. Good firm case and frame for swing, in perfect condition. Cost 16*s.* a few months ago. To first customer for 12*s.* 6*d.*, carriage paid. COOK, Watchmaker, Newark.—[ADVT.]

The Watchmaker, Jeweller & Silversmith.

EDITED BY D. GLASGOW, JUN.

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The Watchmaker, Jeweller and Silversmith.

A Monthly Journal devoted to the interests of Watchmakers, Jewellers, Silversmiths and kindred traders.

Correspondence.—Correspondence is invited on all matters of interest to the trade. Correspondents will please give their full address in each communication, not necessarily for publication, but as a guarantee of good faith.

Subscription.—A copy of the Journal will be sent monthly for one year, post free, to any address in the United Kingdom or countries in the Postal Union for 5s. payable in advance.

Advertisements.—The rates for advertising will be sent on application. THE WATCHMAKER, JEWELLER AND SILVERSMITH will be found an exceptional medium for advertising. Special Notices, Situations, &c., per insertion, 1s. for two lines, prepaid.

Address all business communications to the Publishers,

MESSRS. TRUSLOVE & SHIRLEY,
THE WATCHMAKER, JEWELLER & SILVERSMITH,
7, ST. PAUL'S CHURCHYARD,
LONDON, E.C.

Cheques and Postal Orders to be made payable to J. TRUSLOVE.

Editorial.

ALTHOUGH it is on all sides admitted that business generally shows a marked change for the better, it is by no means satisfactory nor reassuring to observe the lethargy and stagnation still prevailing in some localities and certain branches of trade. The want of improvement is more remarkable in those centres whose manufactures were formerly the most prosperous. Thus watchmaking, whose chief seats are Coventry and London, is still in a very depressed state in those quarters, and one is prompted to look around for an explanation of the cause of existing condition of the industry. This is the more perplexing, inasmuch as the jewellery trade (which past experience teaches is concurrent with the former business in its periods of depression and revival) is, it is gratifying to note, again making rapid strides towards the recovery of its normal prosperity. A consideration of the question from the ordinary economic view of supply and demand is, by itself, therefore, obviously insufficient to afford a solution of the problem. There must be something radically wrong, which it behoves those whose vital interest it is, to ascertain. A trade cannot go on on the jog-trot lines of mere existence; it must either improve or decline; should the English watch trade once begin the retrogressive movement it would be difficult to foresee (having regard to the present formidable foreign competition) where it will stop; it might not be long before it reached a point of atrophy where the manufacture, as a business, would be unworthy of the name. We have no very great fear of this result, however, which is, we trust, not at present within the visual horizon of even the veriest croaker; but the state of the trade, both in Coventry and London, undoubtedly calls for the earnest attention of all who have any interest in the future prosperity of English watchmaking—a rigid examination of the whole of the existing conditions and systems is imperatively demanded—manufacturers who have suffered in the past from ignoring it would do well now to attend to the unmistakable writing on the wall.

General Notes.

A Skibbereen telegram states that a number of English mining experts are examining the copper and barytes mines in that district with a view to their being re-opened.

According to *La Paz Pública* the new auriferous tracts in Sonora, Mexico, comprise a vast zone, the quantity of precious metals contained in it being destined to create another California.

We regret to announce the death (which took place on the 21st ult.) of Mr. Alfred Keeson, Editor and Proprietor of our esteemed contemporary, *The Pawnbrokers' Gazette.* Mr. Keeson was in his 74th year.

The Coventry Co-operative Watch Manufacturing Society were exhibitors last month at an exhibition organised by the Co-operative Aid Association and held at Lord Aberdeen's new house, lent for the occasion, in Grosvenor Square.

F. Congers, otherwise Chadwick, who was last month charged with stealing jewellery from the shop of Messrs. Straub & Hepting, Blackman Street, Borough, is supposed to be one of the nephews of the Miss Clark whose murder some time ago, at George Street, Marylebone, created so much sensation.

The Exhibition of Workmen's Skill at the Crystal Palace, in connection with the Co-operative Union, to which we referred in our June issue, will be opened on the 18th inst. All particulars respecting the exhibition may be obtained from Mr. W. Broomhall, the Secretary, 1, Norfolk Street, Strand.

A passion for precious stones has been a distinguishing trait in many eminent men. In the life, just published, of the Rev. Henry Ward Beecher, of whom many anecdotes are current on the subject, he is stated to have always carried a number of them about with him. We make a fresh record of this, as the weakness, if it be such, is one greatly to be encouraged from the jeweller's point of view.

Mr. Charles Auguste Paillard, the inventor of the now celebrated non-magnetic watch balances and springs, is a native of Chaux-de-Fonds, Switzerland; He is 48 years of age, and is a thoroughly practical watchmaker. He has respectively occupied the positions of President of the Banque Populaire, President of the Horological Society, member of the Municipal Council, and Commissioner of the Horological School, all of Geneva.

A circular, issued by the Coventry Technical Institute, over the signatures of Mr. John Rotherham and the Mayor, is a reminder that the promised subscriptions are now needed. More than 500 students are now attending the classes; but, while the success attending the undertaking so far has been most gratifying to all concerned, the funds already promised are quite inadequate to properly maintain the institution, and an effort will be made at the annual meeting, which will be held in September next, to considerably augment the present list of subscribers. We trust the effort will meet with the deserved success.

The *Revue Scientifique* gives an account of a process for depositing thin coats of metal upon other metals, which has been lately introduced by Mr. A. Levy. The inventor dispenses entirely with batteries and dynamos, the new process being based upon a double chemical decomposition. In depositing a layer of nickel upon either copper or iron, a solution of salt of the metal is prepared, preferably the acidulated chloride, and after the object has been scoured it is suspended in the solution at the extremity of a zinc wire, which partially enters the bath. The zinc is attacked by the salt, and replaces the nickel in the chemical constitution of the solution, the object being consequently covered with a layer of nickel. When this process is employed for copper-plating cast iron, Mr. Levy substitutes an alkaline bath for the acidulated one.

We learn from the *Star* that Mr. Gladstone is shortly to receive at Hawarden a deputation of Burslem Liberals, who will present him with a splendid vase. It stands about 2 ft. 6 in., we believe, and has a "fair, round belly," with good figures beautified. Homer, Brian Boru, Wallace, and various great folk of history "look after" one another around the body of this Staffordshire trophy. Needless to say it is a fine execution—one to do credit to the artist, Mr. Read, and to the manufacturers, Messrs. Brownfield. Mr. Gladstone went to Burslem about 24 years ago, and delivered a famous speech about Wedgwood ware.

Mining Disaster at Kimberley.—A terrible mining disaster, by which over two hundred men lost their lives, occurred on the 11th ult. at the De Beers Mine. The cause of the accident was the breaking of the hauling wire of one of the skips which ran down the inclined shaft, and it is supposed that the lamps ignited the wood casing of the shaft, which blazed up, cutting off all egress. Two hundred natives and 24 whites lost their lives, among the latter being Mr. Lindsay, who recently went out as manager to the Kimberley mine; he was a young man of great promise, much respected by the mining and engineering profession.

Time Signals.—The following information, relating to the time signals which have been established at the Observatory, Fort Napoleon, Alexandria, has been received by the Hydrographer from the Controller-General of Lighthouses and Outports, Egypt:—The signal is a ball, which is dropped twice daily from the Signal Station, Fort Napoleon or Caffarelli (Kom-el Nadoura), as follows:—(1.) The ball is dropped firstly, at noon mean time at the great pyramid of Gizeh—equivalent to 21h. 55m. 29·5s. Greenwich mean time. (2.) The ball is dropped secondly, at noon, Alexandria mean time—equivalent to 22h. 0m. 27s. Greenwich mean time. Position of time signals, lat. 31° 11′ 39″ N., long. 29° 53′ 15″ E. Should the apparatus fail, the ball will be again hoisted, and dropped at 1h. 0m. 0s. Alexandria mean time—equivalent to 23h. 0m. 26s. Greenwich mean time.

Lady Molesworth's Collection.—A collection of plate, jewels, porcelain, decorative furniture, and other objects of art, the property of the late Lady Molesworth, which was on view at the rooms of Messrs. Christie, Manson & Woods, King Street, St. James's, was sold last month under the hammer. One of the best pieces of silver is a Monteith elaborately fluted and embossed and of seventeenth century date, and the silver-gilt plate included sundry pieces of considerable value. The most noteworthy of the jewels is a brilliant necklace with graduated pendants. Numerous brooches and bracelets were also looked at with interest by connoisseurs in the lapidary's art. Amongst the porcelain were a fine piece of Chelsea, a group of the "Grecian Daughter" (407); some Dresden figures of birds, and a pair of open-work baskets and stands, and a candelabrum with scroll branches, and a large old Dresden pug dog. The decorative furniture consists chiefly of carved and gilt work of the Louis XV. and Louis XVI. periods.

Jewel Robberies.—A serious robbery of jewellery from the station at Saltney, near Chester, has been reported to Mr. Fenwick, Chief Constable. Mr. Jones, the station-master, is agent to a Coventry firm of jewellers, and kept a jewel-case on the premises. Early on Monday morning an entrance was made by a burglar through the booking-office, and three silver watches, three gold brooches, and a number of Albert chains, and 5s. of the railway company's money stolen. There were tracks of one man made outside, and a chisel had been used to force open the various locks.—At Crewe, Robert Plevin and William Brooke, railway porters, were charged with stealing parcels containing jewellery and other things belonging to the London and North Western Railway Company. Detective Freeborough said the company had lost a large number of parcels. Portions of the contents of several parcels were found in the prisoner's house, and property of the value of over £100 had been recovered. The prisoners were remanded for witnesses to attend from Birmingham, Liverpool, Earlstown, and Manchester.

Nickel Plating.—The following solution for electro-plating with nickel is used by several firms in Hamault: 500 gems of nickel sulphate, 365 gems of neutral ammonium tartrate, 2·5 gems of tannin dissolved in ether, and 10 litres of water. One-and-a-half litres of water are first added and the mixture boiled for 15 minutes. The remainder of the water is then added, and the whole filtered. The *Electrician* says: "Solution yields an even white deposit, which is not brittle, and the cost of which is hardly more than that of electro-plating with copper." Nickel-plating is now effected in several places in Belgium with the following bath: Sulphate of nickel, 1 kilog. = 2·2 lb; tartrate of ammonia, 0·725 kilog.; tannic acid with ether, 0·005 kilog.; water, 20 litres = 4·4 gals. With this formula a thick coat is deposited on all metals in a short space of time and by a weak current.

Rich Quartz.—There are at present on view in the windows of Messrs. Snow Brothers, jewellers, of Queen Street, Brisbane a number of very rich specimens of quartz from the Golden Gully Gold Mining Company's ground at Ironbacks, N.S.W. The specimens in all weigh ½ cwt., and consist of white quartz, red quartz, ironstone and pyrites. The gold shows in the red quartz in regular nuggets and is distributed right through the stone, while the ironstone is so rich that an assay by Mr. Vale, the well-known assayer of Sydney, shows that it would go 4,000 ozs. to the ton. The pyrites also show free gold, and the assay gave from 8,000 ozs. to 1,200 ozs. to the ton. Although assays of particular portions are very often deceptive as to the value of the quartz in bulk, there can be no doubt that the mine from which these specimens were taken is a very rich one. The specimen stone under notice is valued at £400, and the amount of gold it contained is estimated at 100 ozs. Mr. Wilkinson, the N.S.W. Government geologist, says the stone is the richest ever got out of any mine in that colony. The mine from which it comes comprises an area of some twenty acres, and, strangely enough, like a good many other pieces of ground that have afterwards turned out exceedingly rich, it was worked by a company fourteen years ago and abandoned as a duffer after a shaft of 80 ft. had been sunk. The present holders went 5 ft. deeper and struck the pyrites, and subsequently at intervals of a few feet the other three reefs, which run from 15 in. to 22 in. in thickness. It is only six months since the mine was re-opened, and since then there has been a revival of mining on what was at that time a deserted field.

The order for the Gold Casket to be presented to Prince Albert Victor by the City of York has now been successfully carried out by Mr. J. C. Arundel, of 22, Coney Street, York. It is placed in a polished ebony stand of elegant shape with an abacus in dark blue velvet. The box is oblong in form, with classic mouldings, and the lid is surmounted by the arms, crest and garter of the Prince, in 18-carat gold, with the rose of York, rising in graceful garlands on each side. On the two ends of the lid the white rose is given again in enamel, while the obverse and reverse slopes have the Prince's monogram, with *repoussée* panels, having emblems relating to the municipal and historic greatness of the ancient city. The front of the box itself is divided into three panels, the centre having—also in 18-carat quality gold—the arms of York in full enamel blazon in centre, the two side divisions bearing respectively in enamel painting, one, a view of the famous Minster, the other, of the Micklegate Bar. One end of the box has the arms of the See of York, the opposite one being adorned with the shield, helmet and motto of the Lord Mayor. The reverse part has in centre division the inscription recording the event as follows:—Presented to H.R.H. Prince Albert Victor of Wales, K.G., with the freedom of the City of York, 27th July, 1888, J. Sykes Rymer, Lord Mayor." On each side of this is given devices of the regiments (with which His Royal Highness has been connected whilst at York) in raised and enamel work, one being the 9th Lancers, the other the 10th Hussars. The whole is being carried out in first-rate style, and will prove to His Royal Highness a most interesting souvenir of the occasion.

Lord Londesborough's Collection.—The dispersion of this interesting and very large collection of works of art and antiquity, formed by the late earl during some 40 or 50 years, was completed by Messrs. Christie with the sale of the coins and bronzes last month, and with a monetary result that must be satisfactory and condoling to the present earl, for it gave a total of £28,190. Some of the finest armour and arms and many of the carved ivories and objects of personal ornament were bought by the Paris dealers. Some few choice examples of well-known history have been acquired for the South Kensington Museum or the British Museum, and many good things will remain distributed through various private collections in England and Scotland. The principal object amongst the ivory hunting horns was the rare "Oliphant" of the fifteenth century, which was formerly in the De Bruge collection dispersed in Paris some years ago; it is more interesting archæologically as a specimen of its kind than for the art displayed in the carving and the engraved metal mounting of silver in the form of small shields and bands. The story of St. Hubert forms the subject of the carved work, as is so commonly seen in these horns, of which there are several much finer than this to be seen in England. It sold for £1,071, the highest price of any object in the sale, to Mr. Durlacher, the dealer, and it is said to have passed into Mr. Salting's collection. The beautiful ivory chairs, gilt and painted, which were presented to Warren Hastings by Tippo Sahib, a sofa, four armchairs, a table, and two small stands, were sold in one lot for £1,050. The set of twelve amber-handled knives and a fork, the work of Leonardus Marius, 1634, sold for £126 (Whitehead). The magical speculum of Dr. Dee, the famous conjuror and necromancer of the reign of Elizabeth, known as the "black stone," from being made of Kennel coal, polished and cut into a round slab about half-an-inch thick and 7½ ins. in diameter; into this he used to peer, as he called upon the spirits, after the manner of the ancient seers of the Egyptians and Hindoos; this speculum was in the collection of Horace Walpole, given to him by Lady Germaine, and on the back of it a ticket in his handwriting stating this, and referring to the verse in "Hudibras" in which it is mentioned as "the Devil's looking-glass." In the Strawberry Hill sale, 1842, it was sold for twelve guineas to the late Mr. Smythe Pigott, at the sale of whose library at Brockley Hall, Somerset, it was bought by the late Lord Londesborough in 1853. It was now sold for £73 10s., and has passed again into the cabinet of an English collector. The two low-seated high-backed chairs of mahogany, with leather seats, very dirty and neglected, said to have been used by Napoleon I. at Elba, sold for £15 4s. 6d. to General Pitt Rivers. It will be long before such another collection as this will come under the hammer, occupying seven days in the selling, and consisting of nearly 1,500 lots and several thousands of objects.

The Diamond Market.—The *Amsterdam* market showed a slow but steady improvement during the past month, and although trade is still far from what it ought to be at this season of the year, it is believed the turning point is now reached, and a further improvement may be looked for. A number of foreign buyers are now in the town and some business was going in rose diamonds. *Rough* also met with more demand.

The *Paris* trade had not yet recovered from the usual June quietude. Small transactions, mostly with American buyers, were the order of the day. Other light-coloured gems and pearls were in some demand.

The *London* market showed steady improvement throughout the month. The "Trojan," "Drummond Castle," "Mexican" and another s.s. brought considerable assortments from the Cape. Coloured stones are not in great request, but on the whole the trade shows a marked revival.

At *Kimberley* prices are firmer and all kinds of stuff is in better demand. Shippers, in response to the improved state of the European demand, are showing increased activity.

Silver.—In the absence of purchases for the Indian banks, Bars are still quoted at 42d. per oz., nominally.

Trade Notes.

Mr. S. Bradley, of 36, Vyse Street, Birmingham, having been appointed sole agent and manager of the National Swiss Watch Company, has removed to 26, Frederick Street, whence the wholesale trade can be supplied with the Company's watches at manufacturers' prices.

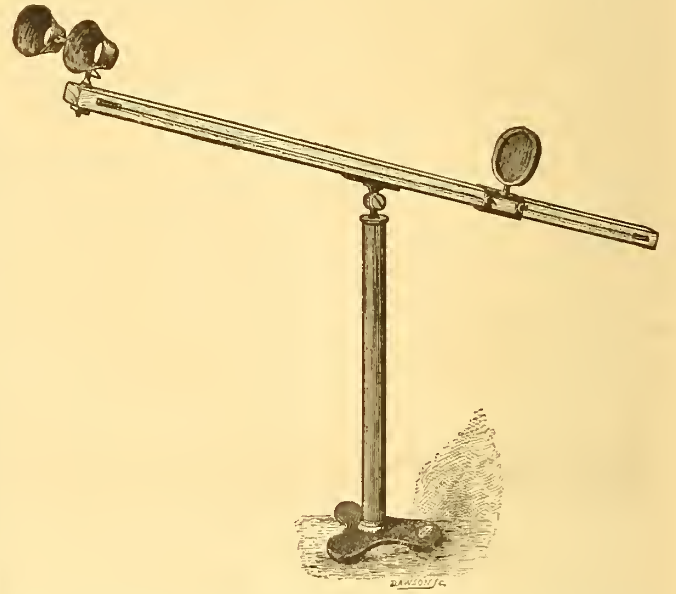
Messrs. Benson have now on view, at their premises, Ludgate Hill, a very handsome clock, which has been made to the special order of one of the Indian princes. The clock is of the Oriental type, showing the days of the week, months, &c., with an alarm which can be used when required. It chimes the Cambridge quarters on four pure-toned gongs, and strikes the hours on a powerful tenor gong. The movement is of a very high quality, and is fitted in a case of solid metal, of the Renaissance style; the greater portion of the framework is of nickel silver, the remainder being brass work, richly engraved and gilt.

We have before us a specimen of Sadler's new patent solitaire, which has some essential merits not possessed by many of the numberless "inventions" of the kind that are flooding the market at the present time, viz.: it is strong, simple, and not liable to get out of order. It consists of a head, having a hole at the back which receives a knot at the end of the stem. To fasten the solitaire, the knob is pressed into the hole at the back of the head, where it is held securely by a circular spring in the head which embraces the knob. The principle is capable of application to all solitaires, shirt and collar studs, etc. The patent number is 3455/87. All communication with regard to the making and vending of this patent should be addressed to Mr. J. Kean, Junr., 3, St. Giles' Terrace, Northampton.

The taste for mechanical jewellery is once more coming into vogue, and numerous ingenious contrivances are shown for the purpose of satisfying it. In this connection we were lately shown a mechanism adapted to pins, studs and brooches etc., by means of which the ornament is caused to revolve. The articles can be had in the shape of double stars, single stones, or other suitable designs for its application. One we saw was a single stone set in a star of pearls, under which was a plain gold star, and, each revolving in different directions gave a very striking effect to the ornament. The contrivance, as patented, is a German invention and the movement can be had separately or with the jewel, complete. The pins or studs are made in various designs in 12, 14 and 18-carat gold by Mr. Edward Day, 28, Warstone Lane, Birmingham, from whom all particulars as to date of patent for England, prices of the article, &c., can be obtained.

The frequent damage to the other parts of the watch which are caused by the breaking of the mainspring is well-known to watchmakers, and numerous are the contrivances that have from time to time been introduced to prevent it. Perhaps an increase of mishaps from this cause, since the going-barrel has become almost universal, is the reason for the success, which, we are informed, the patent safety wheel of Messrs. Newsome & Co., Butts, Coventry, is meeting with. This arrangement consists of a compound wheel, intermediary between the barrel and the centre pinion and gearing with both. The barrel teeth are cut on the middle of the rim, which distributes the friction equally on both ends of the arbor. The first half of the compound wheel gears with the barrel, while the second half gears with the centre pinion, and between the two half wheels are a click and ratchet, similar to those in the going fusee. When the mainspring is driving the train of wheels, the click takes into the ratchet and the compound wheel acts as one wheel, but should the action of the barrel be reversed, as it would were the mainspring to break, the top half of the wheel will simply ratchet the click round and effectually prevent any further damage taking place.

Mason's Improved Optometer Registered.—We are able to give an illustration of a novel and ingenious instrument for measuring and testing the sight both for concave and convex glasses. Mr. W. D. Mason, of Grimsby, originated and worked out the improved system of marking the scales, and has used an optometer graduated by himself with the happiest results in hundreds of cases during the last eighteen months. It has distinct advantages over the old forms of optometers in use. Instead of leaving the customer to judge of the point on the scale where he sees or imagines that he sees *best*, the furthest and nearest points of distinct vision are taken, and these being known, the strength of the lenses required either for distance or reading can in all cases be easily, accurately and rapidly determined. The graduation of the scale shows the powers to be used to correct the refraction in inches, or dioptrics at a glance instead of requiring them to be worked out separately in each case, as must necessarily be done with most of the really scientific optometers in use. The manufacturers, Messrs. Botwright and Grey, the well-known opticians of Clerkenwell, have been able to produce the instrument with additional improvements in the stand and mounting, and facilities for changing the lens and type when required in a cheap and reliable form, which only needs to be known to be appreciated and largely used. The instrument is well finished and of good appearance, forming a counter adjunct at once useful and attractive, the sight of which would often excite the curiosity of customers and lead to sales of spectacles when otherwise they would not be thought of. Provision is made in the new optometer for testing each eye separately, and full and complete instructions for its use are issued with each. The value to the optician of being enabled to detect instantly any abnormal condition of the vision, and, if of different foci, the amount of adjustment required for each eye, can scarcely be overrated, and as the exploiting of any such instrument in a cheap form entails a large expenditure on the part of the manufacturer, it is to be hoped the enterprise of the makers will in this case receive the substantial recognition of the trade.



Casket for Mr. Robert Peel.—The tenantry of the Peel Estates in Drayton, Fazeley, Tamworth, Hopwas, Tamhorn, and Kingsbury, have subscribed for a very elaborate gold, silver, and ivory Casket, containing an address to be presented to Mr. Robert Peel on the occasion of his attaining majority. The design and execution of the work were entrusted to Messrs. T. and J. Bragg, of Victoria Street, Birmingham, and the whole has been carried out with special regard to the occasion. The main body of the casket is ivory, with gold columns, borders, escutcheons, ribbons, and frames to enamel paintings. The arms, shields, bas-reliefs, and model figures are in silver. In the centre of the Casket in front, standing in a raised archway supported by massive gold pillars, is a silver statue of the late Sir Robert Peel, reduced from the statue standing in the Tamworth Market Place. On either side of this in gold frames are enamel painted views of old Drayton Manor, and the present Mansion and Flower Garden. On the reverse of the Casket are the Tamworth Arms, flanked on either hand by the crest of the Peel family and the motto "Industria" beautifully done in silver and enamel. The lid is surmounted by a bold and effective rendering of the Peel and Tweeddale families, with crest, helmet, supporters and motto; the lions being fully and finely modelled in silver, and the blazon in enamel. At the sides on the lid are portraits in enamel of the Right Hon. Sir Robert and Lady Emily Peel, with their respective monograms in shields below. On the front of the lid is a very fine shield showing in gold and enamel Mr. Robert Peel's monogram. The family motto "By Industry" has been made the ruling motive of the design, as evidenced by the exquisite work in silver round the lid representative of Agriculture, Art, and Commerce. Four finely modelled statuettes in silver placed at the corners have reference respectively to Agriculture, the Industrial Arts, and wise and just legislation. The Casket is placed on an ebony base, and the general effect is most pleasing. The delicate ribbons, borderings, and framings of gold, with the requisite designs in silver and the artistic colouring of the enamels show the work of a master hand, and the Committee are to be congratulated on their selection of Messrs. Bragg to carry out the work. Inside the Casket, which is lined with pale blue satin, are the address and signatures. This address is illuminated in a masterly style, bears at the respective corners the Peel and Tweeddale Arms, the Tamworth Arms, and a trophy suggestive of Industry.

Birmingham News.

From Our Correspondent.

A DECIDEDLY more cheerful tone prevails among the jewellers, as a whole, than has been the case at this season for several years, and I have heard complaints from more than one manufacturer that Messrs. So-and-so have been enticing their workpeople away, and that they have been obliged to give some of them an advance in their wages in order to keep them. While sympathising with the firms who have been thus victimised, I must express a considerable amount of satisfaction at the news. This sort of thing can only take place when workmen are fully employed, which I believe now to be the case; there are no good men "out" at the present time, and, in fact, the working men's paper, viz. *The Daily Mail*, contained eight advertisements for working jewellers a few evenings back—an occurrence sufficiently scarce to be remarkable.

* * *

The West's patent solitaire still remains one of the best things going in this class of goods. Mr. W. West and Messrs. G. E. Walton & Co., Ltd., being full of orders for some time to come.

* * *

Among the makers of the best class of gilt jewellery, Mr. T. Wall, Vittoria Street, is holding his own. His stock contains some very nice artistic designs at a reasonable price, which keeps him going full hours.

* * *

A very old-established firm of manufacturing jewellers, Messrs. Gough, of Caroline Street, Birmingham, are relinquishing their trade and selling off their plant, &c., prior to their final retirement.

* * *

Mr. J. Wolfe has removed from 35 to 27, Great Hampton Street, where he has put down a staff of workmen for watch repairs and general jobbing.

* * *

Mr. R. J. Bellamy, manufacturer of black ornaments, &c., has removed to other premises at 378, Lodge Road, Hockley, Birmingham, where he continues business.

* * *

Messrs. Dennison & Wigley, Terrace Road, Handsworth, Birmingham, are making watch cases so successfully as to be able to send quantities to America, in spite of the duty, and thus compete with friend Jonathan on his own doorstep. The firm employs 100 pairs of hands, and the place is fitted up with every modern improvement, and is lighted all through with the electric light.

* * *

The jewel case makers here are affected considerably by the loss of one of the colonial markets. Canada, having put a duty of 60 per cent. upon all goods of this class going into port, has quite closed the market to us.

* * *

Some of the Birmingham die sinkers and tool makers are now producing very beautiful and artistic work. By the kindness of Messrs. Haynes & Ford, Northampton Street, who allowed me to look through their pattern cards, I was enabled to see their class of production, and certainly for variety and excellence of design there is much credit due to them, some of their work being quite equal to the French stamping we have heard so much about. A great number of the ornaments shown to me would have been pronounced as impossible to produce here a few years ago.

* * *

A Medallist that is coming to the front in Birmingham lately is Mr. James A. Restall, of St. Martin's Place, Broad Street. He was selected by the Cyclists' Touring Club to produce their new badge, of which he has produced several thousands. The club contains over 22,000 members, each of whom is supposed to possess one of the club badges in silver. He has also been successful in agricultural and poultry show work, and altogether is turning out a medallist of the very first order. He was an apprentice of Messrs. T. & J. Bragg, Vittoria Street, Birmingham.

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Mr. E. Satchwell, die sinker and tool maker, &c., late of Augusta Street, has removed to Vyse Street.

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There are upwards of 30 gas engines working machinery for manufacturing jewellers at the present time in Birmingham. A few years ago, the firms that possessed a gas engine were like "angels' visits," few and far between. Is it the gas engines that make trade bad, or bad trade that makes the gas engines?

* * *

Mr. W. Spencer, of 33, Regent Place, Birmingham, the noted connoisseur in pearls and precious stones, also one of our oldest and ablest gem ring makers, is about to establish a London house in Hatton Garden, where his special knowledge of precious stones, diamond cutting, mounting, &c., will be of infinite service to the London trade, and, I hope, will be of pecuniary value to himself. Mr. W. Spencer has my very best wishes for success in his new venture. He is a good sample of a thorough English gentleman, and has devoted years of unselfish labour in order to prove that a diamond can be cut as well in Birmingham as elsewhere; his pocket has always been open to the poor, needy and unfortunate; and, as a man of business he holds a position among the highest class for integrity and honourable dealing. No doubt all your readers who visited the Birmingham Trades Exhibition last year will remember the excellent exhibit by Mr. W. Spencer, and the diamond cutters at work there.

* * *

I hear of a case in the coloured gold trade that is certainly as closely allied to the sweating system as anything can well be. A certain manufacturer engages all his hands upon "piece work," holding out hopes of the golden harvest that is to be reaped at the prices he quotes; but when the workman is fairly settled down to his job he finds that the harvest is a delusion, and that making coloured gold bracelets with hollow edges at 10d. each is only starvation, and is another step towards the degradation of the goldsmiths' art. The workman who submits to this is certainly nothing better than a candidate for the nearest asylum for idiots, to say nothing of the assistance he is giving towards the final extinction of one of the most beautiful arts.

The International Exhibition, Glasgow.

Second Notice.

THE JUBILEE PRESENTS.

As we pass from the chambers of the Bishop's Castle, dimly lit by the rays of the sun shed upon the relics of the pomp and glory, the warfare, intolerance and persecution of the past, we cross the Kelvin to the Hunterian Museum, to a scene widely different in every respect.

We pass from the archæological to the modern, from the national and local to the international: from the relics of a Queen and of a royal and unfortunate race, around whom poetry has woven the web of romance, to the Queen and Empress of to-day, more fortunate, not less beloved. But we bridge a chasm even wider than this for we pass from the historical relics of a people who once had a distinct national life and history of their own to the gifts of two nations, now a united empire. We leave behind us the relics of sanguinary struggles and internecine strife, of events the vibrations of which are felt till to-day—of Bannockburn and Flodden and many other battle fields—and our minds are filled with a feeling of wonder that so few generations should have passed since such fierce feuds and wars divided two nations whose interests now seem to us inseparable.

But the Jubilee Gifts are more than national—they are international; and while the Bishop's castle collection tells of much that was brave and noble, of much we are proud to remember and also a little of what we would fain forget, it is significant only of a small country and limited interests: while the Jubilee Gifts point to an empire that has extended throughout the world and include gifts from the far distant and barren Heligoland to India, the cradle of luxury and splendour. The primary effect of an inspection of these presents is to say the least, bewildering. Gifts of every conceivable form and size from the magnificent offerings of the Indian Princes to the samples of the Industries of a town—among which we were much amused to observe several jars of lozenges—crowd the cases of the Museum and present no little difficulty to classify and critic'se.

That the offerings should in a great measure be made of the precious metals is not to be wondered at, for the identity of human experience in all ages and in all climes would lead us to expect that as it was in the days of Solomon "when the King made silver to be as the stones in Jerusalem" so it should be in the days of Queen Victoria. But the donors of some of these gifts have presented what to them is more precious and significant than gold or gems. From South Africa come the ostrich feathers, from India the ivory tusks, from Iceland the eider down. From the Queen of Hawaii comes an ornament with the Royal monogram V.R. formed of red feathers in the centre, surrounded by a wreath of yellow and green feathers. The Royal yellow feathers are from the Ooo or Royal Bird, and are the same as used in the sovereign's state cloak. The birds are black and possess only one yellow feather under each wing. The green and red feathers are from other birds, the use of whose plumage is confined to royal personages. The presentation of such a gift is significant, much more so indeed than if it was of gold or silver. The approved, and one might also say, the natural form of congratulation seems to be that of an address. The idea is apparently indigenous to all countries, for addresses have come from all parts of the globe. The large majority of them are enclosed in cases and caskets, and with a few remarks on the latter we will commence. It was with a feeling of thankfulness that we turned aside from the addresses themselves and felt grateful that it was not our lot to report upon them, for their number was alarming to contemplate, and their size repelling to consider One volume indeed, the gift of the Primrose League, assumes the proportions of a cyclopædia, and an address from New South Wales is of such dimensions as to require to be mounted on a revolving stand, and to be unrolled with a mangle-shaped handle, giving it a shadowy resemblance at a distance to a patent washing machine. We approached the consideration of these caskets with our mind pervaded by the theory that this was a rare opportunity for the comparative study of the productions of the goldsmiths' art in this decade of the nineteenth century as practised by nearly all the nations of the world. The theory sounded well, and at first it seemed likely to be productive of results, but on examining the gift of an Indian potentate, whose name was an unpronouncable combination of consonants, a stray of light revealed, to our astonishment, the well-known punches of the London hall-mark, and our theory, like a house of cards, was demolished. Evidently we concluded the nationality of the donor is no sure indication of the nationality of the goldsmith. In general, however, we are perfectly enabled to appreciate the productions of our time, and to acquaint ourselves with the peculiarities of the different countries: for notwithstanding the levelling influence of modern education and fashion, there still exists remarkable diversities which in some countries rise even into national characteristics. There are exhibited altogether about 135 caskets and 95 cylindrical rolls for containing addresses. In size they vary from a tiny gold casket to contain a jewel, from the Maharaja Sir Partab Singh, to a large bog oak chest with an illuminated address containing 150 signatures from the women and girls of Ireland, and another huge gilt casket on a sacred Buddhist chest, standing about 5 feet high, which comes from the women of Burmah.

It is one of the problems the modern silversmith finds hard to solve—to devise something new in the way of a casket. A few of these present some features of originality—specially in form—which are notable. One casket from the Taluka Local Boards and the municipal districts within the Bijapur collectorate, and another from the inhabitants of Ahmedabad, are in the form of Indian temples. The reproduction of the architectural features of these buildings in miniature has been carried out with the painstaking accuracy in detail for which Oriental workmen are famed, and the effect is both novel and pleasing. Another casket, with a similar motif, comes from Mysore and Bangalore. One of the most curious is that from the members of the Bilgram Institute, Oudh, which assumes the form of a fish, with the scales executed in rough embossing. The Raja of Kolhapur has enclosed his address in a miniature model of a lighthouse. It is a faithful reproduction, with a tinge of eastern feeling about it, of the modern lighthouse; but why, we cannot help asking, should an Indian Raja choose a lighthouse as the motif of his design? Among the happiest conceptions of these freaks of fancy are two caskets, one from Allahabad and another from Saugor, which reproduce in miniature the Indian palanquin with its pole for the bearers. The idea of selecting this characteristic and picturesque vehicle of India, and the adaptation of it to its novel purpose, strikes us as peculiarly happy. From the inhabitants of Fyzabad and Adjodhya comes a silver and gilt casket in the form of an umbrella. The Nawab Bismillah Khan Bahadur Babi, of Radhanpur, is sentimental in his choice. (We do not know whether the length of one's name adds sentiment to its possessor in the East.) He has sent a silver filigree casket in the shape of a heart. A curious erection, resembling nothing so much as the typical representation of the car of Juggernaut, has been sent by the municipalities and public bodies of Bengal. The freemasons of the Punjab have sent a huge ebony casket with silver plaques, large enough to contain an infant, and funereally solemn in appearance. In striking contrast to the latter is an ivory casket lined with ostrich feathers, from the town of Kimberley. It is in the form of a trunk, with hasp and lock in gold and enamel. The address from the Native Ladies' Social Club, Lagos, is contained in a gold calabash. There are three caskets in the form of an ordinary column or pillar. One of them struck us as being such a combination of originality and unsuitability that we think it is likely to act as a pillar of warning to designers in search of originality.

It has been said that one of the main differences between eastern and western art is colour. The oriental relies little upon form for effect, and when colour is not available, he endeavours to make up for its defect by loading the object with symbolical and plastic decoration that amid the richness of representative ideas we may not note its absence. This may be seen in many of these Indian caskets. When on the other hand we turn to the caskets in which enamel has been introduced, or to those made of damascened iron, we find a wealth of effect that in western art is rarely obtained where the decoration is purely plastic. Away from the east—if we except Spain where it is an inheritance from the Moors—such damascened iron work is not to be found. It was upon their arms the orientals loved to lavish this method of decoration, and a beautiful sample of it is shown in a battle axe—the gift of the Raga Pertab Narain Singh Deo Bahadur, of Jushpore. Besides this there are five damascened caskets—from Bamra, Sialkot, Gujerat, Jhelum and Pind Dadan Khan and Lahore—which for chaste and refined beauty are not excelled in the whole collection.

By far the greater portion of the caskets are of what may be termed more ordinary design. They are of all sizes and forms and of all styles of ornament, from Early Celtic to Renaissance. Anything like an intelligible description of them baffles our ingenuity, but nevertheless a few may be mentioned. The City of Glasgow sends a richly embossed silver gilt casket with a plaque in front of the marriage of the Queen and Prince Albert. Singularly enough Edinburgh has sent no casket on this occasion although she has presented many on less important ones. An exquisite gold casket comes from the Governor of the Gold Coast Colony. It is made of West African gold nuggets and dust and weighs 30 oz. The palm fruit—from which the oil of commerce is obtained—the palm tree and elephant's tusks are introduced into the design, which is throughout most pleasing. An oak casket with silver mounts, from Inverness, is richly carved with Celtic ornament and possesses quite a unique appearance. We are recalled to politics and the burning question of the day by the casket from Dublin. The address purports to be from the "Loyal" citizens of the City of Dublin. We would have thought that on such an occasion as this all the citizens of Dublin would have subscribed to such an address; but perhaps it means that all the citizens of Dublin are "loyal." Let us hope so. From the Queen's tradesmen in London there has come an inlaid wooden casket. From Reading, Kingston-on-Hull, Jersey, Barbadoes and many other places have been received caskets, but time and space prevent us noticing them in detail.

The cylindrical rolls in which many of the addresses are contained do not call for much special mention. Most of them are either round or octagon shaped. From the North West provinces of India there have been sent some plain ones of primitive workmanship. The inscriptions are of curiously formed letterings much resembling some of those on the early Scottish plate in the Bishop's Castle. The bamboo with silver mounts has been adapted to five rolls which all emanate from India. The figure of the elephant has been very successfully introduced as a support to some of these cylinders. In that from the Chiefs of Kathiawar, two elephants with their keepers at their sides support the cylinder. Another from the inhabitants of the Madras Presidency is supported by a single elephant, and is studded with rubies and other gems. In yet another from Ceylon three jewelled silver elephants kneel before the cylinder—as it were typifying the homage their donors offer in presenting the address.

In a few cases the address has itself been engraved or enamelled on a silver plate. This has been done by two potentates from Lucknow, and also in the address sent by the Goldsmiths' Hall, Dublin. The most unique of all in this style is that from the Jewish inhabitants of South Australia. The plate on which the address is engraved takes the form of the Roll of the Scriptures used in the Jewish synagogue, and the address commences with the Hebrew words, "Pray for the welfare of the ruling power."

Perhaps the finest piece of work in any class and from any point of view is the gift of Her Majesty's Household, Past and Present. We have long been familiar with it under the name of the "Helicon Vase." It was produced by the late M. Morel Ladeuil for Messrs. Elkington some fourteen or fifteen years ago, and was said to have occupied him six years. No words can convey the chaste and harmonious beauty of this work, whether we have regard to its form, its decoration, or its execution. In the catalogue it is described as a "Vase of ovoid form, with the Apotheosis of Poetry and Music as its scheme of decoration." On the outer border of the plateau is a series of twelve bas-reliefs illustrating the various descriptions of music and poetry. On the plateau at each side of the vase are two semi-draped figures symbolical of music and poetry. On the body of the vase itself are representations of the nine muses. The modelling of the figures throughout is simply superb. The *repoussé* work on the bas-reliefs is not less meritorious, while the grace and elegance, the individuality and the expressive power of each detail of the design is beyond praise. It is with a feeling somewhat akin to that with which we view some of the paintings of the old masters that we gaze upon it, for the subtle brain which conceived it, and the skilful hands which executed it, are now laid low in death.

It is on viewing such a work as this that we become impressed on the one hand with the possibilities to which our art may attain, and on the other hand with the weakness of technical skill which the trade in general has at its command. The great fault of English work, as it appears to us, is its inequality. Now it is a principle of art that nothing can be perfect unless all its parts are perfect. We may perhaps be excused if we point out what seems to us the outstanding weakness in our modern work. It is the weakness of drawing and modelling in our figure work. Now this is the strength and essence of Morel's work. He possessed a consummate knowledge of the human figure in all its parts, and that knowledge was to him a power, and influenced his whole art. Technical and art schools may do something towards the removing of this blot, but we think that individual study would do much more. After their apprenticeship ceases, the large majority of our chasers seem to come to a standstill. It is the lack of study—of what to them should be a life-long study—that causes this. It is not for us to point out here how that should be attained, for in all our large towns there are abundant facilities for following out our studies in hours of recreation. But one hint we would like to give, and that is that the study of ornament should be approached through the study of the figure. At first they do not seem to have any relation to each other any more than that the study of landscape should be approached through the same medium, and yet that is what our great artists recommend. It is inconceivable, except to those who try it, how it improves our knowledge of what our work should be and how it raises our standard. The ancient Greeks realised it, and their work is their testimony to its truth. The French realise it, and Morel's work emphasises it.

But this is a digression, and we pass on to another of Elkington's works, the gift of the King and Queen of the Belgians. It is a vase of silver and silver gilt standing upwards of 4 ft. high; besides the inscription, four memorable dates are engraved upon it:—the date of the Queen's coronation, June 28, 1838; of her marriage, February 10, 1840; of the date of her proclamation as Empress of India, May 1, 1876; and of her Jubilee, June 28, 1887. In an adjoining case to those two latter works is the presentation from the children and grandchildren of the Queen. It consists of a silver and silver gilt plateau, from the centre of which rises a large vase and cover with raised bosses on which the names and arms of the donors are engraved. On each side the vase is supported by the lion and the unicorn. The design in general is a dim reflection of the German school of metal work, and it has been designed by a royal hand—the Empress-Queen Frederick, of Germany.

Among the miscellaneous articles of which the rest of the collection consists, are many things worthy of note. From the British subjects resident in Italy comes an exquisite scent fountain, a reproduction in miniature of the Tartarughe Fountain in the Ghetto at Rome. H.H. the Sultan of Johore has sent a model in silver, silver gilt and enamel of the Albert Memorial in London; it is the work of Mr. Benson, of London, and is a masterpiece of execution. The Khedive of Egypt has presented a necklace and pair of earrings; the motif of the design is essentially Egyptian; the lotus flower, the scarabee and the sphinxes are all introduced, as well as figures representing the deities and symbols and emblems in enamel. The Maharaja of Travancore has sent a "Mandapa" in gold. What a mandapa is we do not precisely know, but in appearance it resembles a cupola supported on six pillars rising from a hexagonal basement. The cupola is surmounted by a lotus on which is laid a figure of Vishnu and his two wives. From Lord and Lady Rothschild, and from the boys of Charterhouse School come two large silver bowls. The former is specially large in size, is fitted as a jardinière, stands on four claw feet, and has two lion-head handles. There are two magnificent trophies, which, from their size and general appearance, attract much attention. They are both the gift of the Maharaja of Travancore. They are both composed of elephants' tusks, and one of them mounted on a buffalo's head carved in ebony; they are elaborately mounted in gold and are surmounted by a figure representing some of the incarnations of Vishnu.

There are several reminiscences of the Jubilee of George III. Among them is a huge leather coffer which contains 30 boxes of addresses representing nearly three million signatures. There is also a silver mug which was used at his late Majesty's Jubilee. When we left the Bishop's Castle we thought we had taken leave of the Archæological, but it confronts us even here in the form of an ancient arrow head mounted as a brooch which appropriately enough is the gift of the Archæological Society of Ballymena.

Of our army and navy there are also reminiscences. The non-commissioned officers and privates who rode in the charge of the Light Brigade at Balaclava have sent an address. There is also a souvenir of the "Wooden Walls of England" in an oak gong stand made from the wood of the "Temeraire." Of the great Napoleon there is also a memento. A lady has sent a case containing an old engraving of his portrait, and a piece of the wall paper of the room in which he died at Longwood.

We have confined ourselves in this article to the principal objects in the collection, but there is a considerable number of articles of a miscellaneous character, such as albums, jewel boxes, salvers, inkstands, spice boxes, paper cutters, candelabra, musical instruments, and one would think every conceivable and inconceivable form of ornament which it hath entered into the imagination of man to devise, to which it is impossible even to refer. The collection is but a part of the whole of the Jubilee presents (and we have not seen the whole of them) but in the selecting of them, more of the Oriental than the European may have been brought to Glasgow. One fact, however, impressed us and that was that the most costly and the most magnificent have come from India, and perhaps this is as it should be, for has it not been said that India is the jewel in the crown of the British Empire?

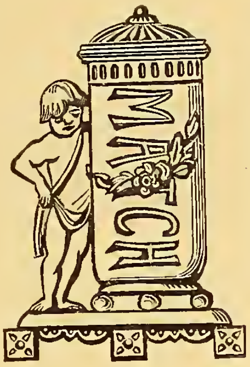
The Watch Trade and the Merchandise Marks Act.

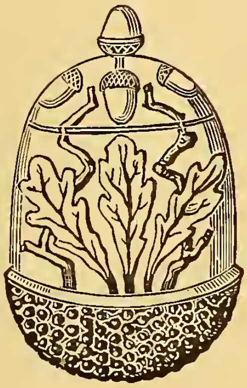
THE *Coventry Herald* says that the troubles of the watch trade do not appear to have ended with the passing of the Merchandise Marks Act. One object of this measure was to prevent foreign manufacturers from passing off watches wholly or in part made abroad as genuine British productions. This it is believed to have done to a large extent. It seems, however, that it has not prevented English manufacturers succeeding in the trick. During the agitation on the Hall-marking question which preceded the passing of the Act, it was boldly alleged that home manufacturers were amongst the greatest offenders, and Sir John Bennett caused a sensation by alleging that the chief agitators used foreign materials in their watches, and that the watches which they wore at the time of their interview on the subject with the President of the Board of Trade were not genuine British articles. The impeachment was scarcely denied; but the practice was excused on the ground that it was merely a means of self-defence until the Hall-marking of foreign watches was prohibited. The Act has been for some months in operation, however, and manufacturers are still to be found who are willing, for reasons best known to themselves, to risk the pains and penalties which the Act prescribes. The Committee of the London Watchmakers' Trade Association have deemed it advisable to issue a circular in which the Act is defended against the complaints that it has made trade worse and paralysed it. The circular states that "watchmakers, like others, must wait: depression of trade exists in all branches of manufactures, and until things in general improve, and buyers come forward, the watch trade cannot be any better, but it will not be long after trade revives before the benefit of the Act will be felt by all watch workers; and those that deny this would in most cases, if traced out, be found to be more or less interested in the old state of things, for the taint of selling goods for what they were not, *i.e.*, foreign goods as English, &c., was deep and widespread, and like other complaints, the removal causes inconvenience, loss and pain to those who were tainted with it." While these suggestions are made to account for the want of expansion in the trade which was expected on the passing of the Act, it is thought necessary to call attention to the fact "that anyone knowingly assisting in any way in getting foreign watches sold as English, are liable to prosecution. Dial painters and engravers in placing English names and addresses on foreign dials and movements without the country of origin, incur a serious responsibility." Then provision is made for information being given to justify prosecutions. It has of course been assumed in certain quarters that the nefarious practices which the Act was to put a stop to were known only or chiefly to the London trade; but a circular just issued by the Coventry Watch Trade Association opens up another phase of the question. The circular contains statements of a far more serious character than have been made by those who regarded the Act with no particular pleasure—it is, in short, a direct indictment of some local manufacturers. Headed "Caution," the circular says:—"The Committee of the Coventry Watch Trade Association having (notwithstanding the very stringent provisions of the Merchandise Marks Act) received various reports from time to time of manufacturers still working up foreign movements and other parts of foreign materials, they beg to warn such persons against selling as English, watches that are made up of an undue proportion of foreign materials, or applying false marks or false trade descriptions to watches, or in any other way infringing the law: and they wish it to be distinctly understood that, after this notice, they are fully determined to take proceedings against any persons so doing, upon information of the fact being given to the committee."

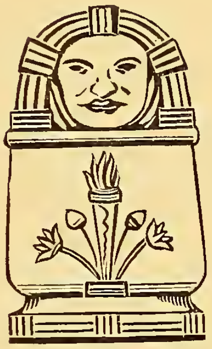
Information has been received that the following time signal has been established at port of Spain, western coast of Trinidad island, West Indies:—The signal is a ball, dropped from the Observatory tower, at noon, port of Spain mean time, equivalent to 4h. 6m 2·5s. p.m., Greenwich mean time. Position, lat. 10° 39′ N., approximate, long. 61° 30′ 38″ W. This signal is reported to be occasionally unreliable.

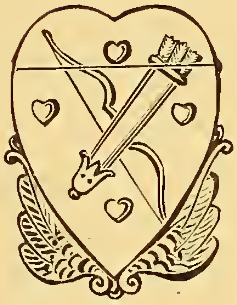
Watch Fashions.—The Paris correspondent of the *Daily Telegraph* writes:—Parisiennes are never so happy as when they are changing the "Fashions." No sooner has one cri come into vogue than it is supplanted by another, and so the perpetual transformation goes on with the regularity of a pendulum until it comes to a full stop, and then begins over the old ground once more. Some months since it became highly unfashionable to have pendules, no matter of what period or artistic sumptuousness of design and ornament, on your mantlepiece. The reason for this was that ladies carried little portative watches, first on their card-cases, and afterwards embedded in the handles of their parasols and "gamps." There was therefore no occasion for them while visiting to cast furtive glances at the pendules when they wanted to know the time. It was, moreover, a dastardly reproach, if not a glaring insult, to your fair visitor to keep a clock on the mantlepiece of your salon when you knew, or were supposed to know, that she had a tiny chronometer made after the most approved style ticking in the top of her parasol. Now another slight change in the fashion of portable timepieces has set in, and the last command of modish caprice is to carry a small watch embedded in a bracelet of morocco leather which is worn around the wrist.

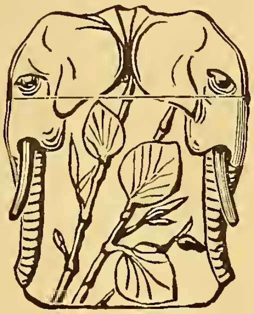
New Designs for Silver Match Boxes.

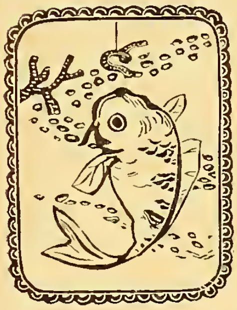


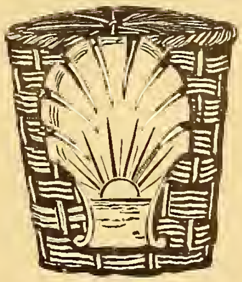












A. OSBORNE.

The Kew Observatory.

VERIFICATION DEPARTMENT.

Telescopes and Binoculars.

THE Kew Committee of the Royal Society have issued a notice through the Superintendent of the Observatory, Mr. G. M. Whipple, that they are now prepared to Examine and Certify at the Kew Observatory, Richmond, Marine and Terrestrial Telescopes, as well as superior Binoculars and Opera Glasses.

Persons ordering such instruments of Opticians may usefully direct them to be forwarded to the Observatory for Examination before delivery.

The Superintendent of the Observatory may at his discretion decline to receive such instruments tendered for examination as he may consider not capable of attaining a sufficiently high standard.

No Certificate will be granted for any Telescope or Binocular unless it bears a clearly defined distinguishing number, which must be engraved upon the tube, or tubes, but a maker's name need not appear.

The nature of the tests are—

(1.) General Examination of the Instruments and comparison with Admiralty Standards.

(2.) Determination of the magnifying power, definition, freedom from colour, the extent of field, ratio of effective aperture to focal length, and the flatness of field.

In the case of Binoculars additional tests are applied for the symmetry of the glasses and the suitability of the arrangements for focussing.

The following are the Fees charged for examining and issuing a certificate :—

Navy Telescopes and Field Glasses...	...	2/6 each
Opera Glasses and Pocket Telescopes	...	1/6 ,,

Transmission of Instruments to and from the Observatory.

The letter of advice, accompanying Instruments sent for verification, should contain the maker's name, the reference number of each instrument, and full directions for their return.

All possible care is taken by the Committee to guard against loss or injury : but it is to be understood that all risks are assumed by the person sending the instruments.

The Telescopes and Binoculars may be forwarded by Parcels Post, the London and South-Western Railway, or by one of the Parcels Delivery Agencies, the carriage to and from the Observatory being paid by the sender.

Correspondence and parcels should be addressed to The Superintendent, the Kew Observatory, Old Deer Park, Richmond, Surrey (Verification Department).

Taxation of Gold and Silver Plate.—The *Gazette of India* of June 1, published by authority in Calcutta, contains the full text of the correspondence between the Government of India, the India Department as represented by Viscount Cross, the Treasury, and the Goldsmiths' Company. The Governor-General of India and Lord Cross earnestly press the question of taxation of gold and silver plate upon the consideration of the Treasury, on the ground that England, having succeeded in obtaining the abolition of all customs duties affecting her manufactures in India, especially the duty on cotton goods, which alone cost the Treasury of India a million sterling per annum, it is incumbent upon the home country to give a reciprocal advantage to Indian manufacturers of gold and silver plate, a concession which would only cost England a few thousands a year. The Goldsmiths' Company, however, by a letter which is simply in the last degree "Protectionist," succeeded in persuading Mr. Goschen to decline this year to comply with the demand of the Indian Government, although promising to give early attention to the views contained in the correspondence.

Rodgers' Experiments with Heavy Pendulums.

RODGERS, a Liverpool maker of astronomical clocks, made, in the summer of 1871, says "Tricotrin," in the *Jewelers' Weekly*, experiments with a view to ascertaining how much weight was required to keep in action a clock with pendulums of different weights. The experiments were made with a pendulum clock having a dead beat escapement and jeweled pallets. The pendulum rod was compensated by steel rods and a zinc tube, weighing about two pounds. Three bobs of different weight could be attached to it. The clock was an eight day one and the drop of the weights was about four feet.

The results of the experiments were as follows :—

Weight of the Pendulum Bob.	*Motive Weight of $1\frac{3}{4}$ pounds.*	*Motive Weight of $2\frac{1}{4}$ pounds.*	*Motive Weight of 9 pounds.*
2 pounds.	The clock stopped after 25 minutes.	The clock stopped after 35 minutes.	The clock beat without interruption. The arc of vibration was 4°.
12 pounds.	The clock beat with an arc of $1\frac{3}{4}$°.	The clock beat with an arc of 2°. Tried one week.	The clock beat with an arc of $4\frac{1}{2}$°. Tried one week.
75 pounds.	The clock stopped in less than 24 hours.	The clock beat with an arc of $1\frac{3}{4}$°. Tried one week.	The clock beat with an arc of $3\frac{1}{2}$°. Tried one week.

The 2-pound pendulum did not beat longer than 25 minutes if its weight was not increased to sustain a large arc of vibration.

The 75-pound pendulum would run without any further sustenance of impulse for many hours. When the 9-pound motive weight was suspended the same pendulum swung two degrees, gradually increasing, until the next day an arc of $3\frac{1}{2}$° was attained. Later on a motive weight of four pounds was put in place of the 9-pound weight and the clock had gone without interruption up to the time that these results were announced.

For about two months after the 75-pound bob was attached the clock assumed a rate both irregular and retarding, which may have been caused by the severe strain of such a heavy weight upon the zinc rod. However, after this period the rate became steady and could be regulated. The shape of the pendulum bob was spherical, which is to be recommended, because it encloses the greatest weight in the smallest surface, thus reducing the influence of the resistance of the air to a minimum. The rate of the clock became much steadier after the 75-pound bob was substituted for the 12-pound bob.

It is apparent that with a 2-pound bob the pendulum vibrated under very unfavourable conditions, because the rod weighed as much as the bob. The nearer the conditions approach those of the mathematical pendulum the smaller need the impulse or motive power be, as a glance at the above table will show. A 75-pound bob is kept in motion with $2\frac{1}{4}$-pound weight, and vibrates to the same extent as a 12-pound pendulum with a $1\frac{3}{4}$-pound weight.

Denison for a long time recommended heavy pendulums for astronomical clocks, claiming greater regularity of rate for them. His assertion has thus been splendidly verified through Rodgers' experiments.

No Practical Good, after all.—Timothy Hayseed (looking at non-magnetic watches displayed around a dynamo) : "Waal, science is great, I vow! A machine ter make the watches go! But, arter all, 't ain't no practical good, seein's how you couldn't carry an outfit like that round with you. Gimme the good old verge arter all : they ain't nothin' like it fur handiness."

The Electrical Distribution of Time.

By Allan D. Brown, Commander, U.S. Navy, Assistant Superintendent of the Naval Observatory, Washington.

A Lecture delivered before the Franklin Institute, *January 13, 1888.*

(Continued from page 11.)

THE system of the Greenwich Observatory being the oldest in point of time merits the first description. The standard sidereal clock is a remarkably fine piece of workmanship, having in addition to a peculiarly constructed compensated pendulum, an auxiliary apparatus intended to still further aid in the compensation for changes in temperature, which it would be impossible to describe intelligibly without a drawing. There is also an arrangement for counteracting the influence of the variations in the density of the air, which is the invention of Sir George Airy, and is very ingenious; two bar magnets are secured to the bob of the pendulum diametrically opposite each other, one with the north pole down, the other with same pole up; below these at a distance of about four inches is a horseshoe magnet which hangs on one end of a walking-beam, to the other end of which is attached a float resting on the surface of the mercury in the cistern of a specially-constructed barometer; with a rise in the barometer the horseshoe magnet rises nearer the bob and thus exerts a stronger influence upon the swinging magnets, causing the pendulum to oscillate more rapidly; the contrary takes place when the mercury falls. Notwithstanding all these refinements the published records of the Observatory show that the clock does not run with perfect accuracy, a variation of its daily rate as large as 1·15 seconds being recorded in a year. It does, however, run with but slight variations of rate from day to day; still it shows as great a loss as one minute in six months; it is supposed to be regulated to lose a small amount daily, but the records show that it occasionally gains as much as half-a-minute in five or six months. I mention this here in order to show you that those people who talk about their clocks or watches running to within a few seconds a year are probably somewhat wide of the truth. This standard sidereal clock registers its beats upon the chronograph used in observing transits, controls the remaining sidereal clocks in different rooms of the building and finally drives (in unison with itself) a sidereal chronometer. The controlled clocks are upon the Jones' system (as modified by Sir George Airy); in this system the secondary clocks are required to be quite as good timekeepers as the primary one, which makes it too expensive for general use among the public. As used at Greenwich, the standard clock closes a circuit in which the controlled clocks are placed, every second; on the pendulum of each of these latter is a magnet, which at the end of its swing enters a coil of insulated wire; as the current passes, the effect is to hold the magnet within the coil, and hence to place the pendulum in a definite position, which corresponds in effect to that of the pendulum of the primary clock; this closes the circuit by means of a wheel on the seconds arbor, which presses upon a spring at each forward motion. The sidereal chronometer already spoken of in this connection, is constructed practically upon the same principle as those of Wheatstone, referred to in the early part of these remarks. This sidereal chronometer is in the time service room and is used for the purpose of comparison with a similarly-constructed mean time chronometer which is driven by the mean time clock now to be described; this is essentially a galvanic clock of peculiar construction, and of which I imagine there are but few existing; as the pendulum swings to the right it closes a circuit through the coils of an electro-magnet which actuates a peculiar mechanism, by which, as the pendulum swings to the left, a weight is caused to impinge upon the pendulum, thus giving it the impulse which in an ordinary going clock it receives from the weight or spring; this impulse is given at each alternate vibration. At each extremity of the swing of the pendulum it closes a circuit which, acting upon the coils of two electro-magnets, alternately attracts and repels the opposite ends of a balanced polarised armature; this rocking motion is readily converted into a rotary one, causing the seconds hand to revolve, and, by the usual device of a train of wheels, the minute and hour hands also; there are several clocks driven by this pendulum, including the mean time chronometer just mentioned as being in the time service room. The apparatus for correcting the error of the standard mean time clock consists of a magnet secured to the pendulum which swings over a hollow coil of insulated wire attached to the clock case; if a current be passed through the coil in one direction the magnet on the pendulum is attracted and the oscillations are more rapid; if a current be sent in the opposite direction the contrary is the case; a switch in the time service room serves to operate this arrangement when desired, and the battery is so arranged that it will accelerate or retard the pendulum at the rate of one-tenth of a second in a minute. The practical working of the observatory portion of the time service is as follows: The error of the standard sidereal clock is obtained by means of star observations as before described; at 9 a.m. daily, the mean time and sidereal chronometers in the time service room are compared by what is known as the eye and ear method; that is to say, the observer waits for the coincidence of the beats of the two instruments and notes the time shown by each at this instant; applying the error of the sidereal clock to the time shown by the sidereal chronometer, the correct sidereal time is found; by a comparatively simple operation the corresponding mean time is found, and from this the error of the mean time chronometer, or what is the same thing, the error of the standard mean time clock; suppose that this clock is found to be one second slow; the switch to the coil in the clock is turned in the accelerating direction for ten minutes, during which time the pendulum is swinging faster than usual, and at the end of this period the clock has gained the necessary second; and not only the standard, but all the clocks that are driven by it. In this condition the standard is in readiness to be used as a transmitter; it is in a circuit which is closed automatically every hour by the operation of wheels within the clock itself. The closing of this circuit operates a relay which transmits a single beat (that of 0 minutes and 0 seconds of the exact hour), to the General Post-Office in London, and also to the station of the railway leading to Deal. At this latter point a time ball is erected and is dropped by the hourly signal sent at 1 p.m. The hourly signal is also transmitted over certain private wires belonging to various jewellers, for the purpose of comparing their timepieces. In one case, at least, this signal is also used for purposes of distribution as will be noted further on. The line to Deal is for a short time virtually under the control of the observatory, so that a return signal is sent which announces the fall of the ball. A very ingenious adaptation of the galvanic clock described as the mean time standard is in use on this circuit. At a certain point where the line to Deal is looped in, this second clock is placed. It is regulated so as to have a gaining rate of several seconds, so that at 1 p.m. it is always too fast. When that hour is shown by the clock, the circuit which operates the electro-magnet and thence the clock train is switched out automatically, and the Deal loop is switched in, the pendulum continues to swing until the passage of the signal from the observatory opens the circuit and the clock then moves on, showing the exact Greenwich time as it starts.

From the General Post Office the time is distributed in the city of London hourly, and throughout the country at 10 a.m. and 1 p.m.; the arrangement for this distribution is very elaborate, there being four groups of circuits, each worked by a separate relay, which is itself worked by the hourly signal from the observatory. The lines within the city being used for time purposes only are always in circuit; the country lines, however, are used for ordinary commercial purposes, hence it is necessary that they should be cut out just before the times at which the signal is to be transmitted; this is accomplished automatically by a specially constructed clock which opens the relays about two minutes before the hours of 10 and 1, thus clearing the lines for the reception of the signal; about ten seconds after its passage the relays are closed by the action of the clock. It will be observed that the signal sent over the wires is but a single beat, and is, therefore, of a character that would hardly be suitable for use in this country of magnificent distances. All of the time service work outside the observatory (except that of the Deal ball) is under the supervision of the Post Office Department, and a large number of persons are thus supplied with the Greenwich time direct; in many places the signal is repeated by local operators to smaller offices, so that, practically speaking, the standard time of the country is dispersed throughout England, Scotland and Wales; in Ireland, Dublin time is the standard, and Greenwich time is used only for purposes of comparison.

In addition to the time ball at Deal, a like ball is dropped daily at the same hour (1 p.m.) from one of the turrets of the observatory: this ball is the oldest in existence, having been first dropped in 1833. Time guns are fired by the same signal at Newcastle and North Shields.

Reference has been made to the distribution of time by private parties in the city of London; this is done by the firm of Barraud & Lund, whose system is one of much ingenuity. In it ordinary clocks are provided with an attachment by which the error of the clock can be corrected at any exact hour, provided that this error does not exceed two minutes. In the central office is a mean time regulator provided with means for correction of its error by an electrical attachment similar to that in use at the observatory in Greenwich; the error of the standard is ascertained by a comparison of the signal received from the observatory at each hour, with the beats of the regulator which are registered upon a chronograph. The regulator is corrected when necessary and sends automatically a signal over all the lines leading from the office at 0 minutes and 0 seconds of each hour. This signal actuates the armature of an electro-magnet in each clock; from this armature are projecting arms which make a sliding connection with the setting pins which protrude through a slot in the dial, and act like a thumb and finger to bring the minute hand to the 0 position: the arms have a counterpoise which serves to bring them back to their normal position when the current ceases. The contact in the regulator clock is not instantaneous, but prolonged for some seconds in order to be sure of effecting the desired correction. Combined with these synchronising clocks are audible and visual signals, the first being made by a bell, the second by a revolving disc which shows alternately red and white. Such a signal is used in the London Stock Exchange, but it would seem to have the disadvantage of requiring that attention should be directed to it for some time before its arrival.

In Liverpool, Glasgow and Edinburgh the Greenwich time is distributed by several clocks provided with the Jones system of regulation: at least this was the case up to a comparatively recent date.

In Paris, the observatory distributes the time to thirteen so-called horary centres, each of which is furnished with a secondary clock that is in itself a good and expensive timekeeper, and is regulated by the central clock through a modification of the Jones system. The central standard, besides being provided with the most approved compensation, has also upon the pendulum a small box in which light weights are from time to time placed or from which they are removed to restore the rate of the clock to the normal when it is found to have been disturbed. At each vibration of the pendulum the circuit is closed for a large fraction of a second and the current from the battery switched in; this animates an electro-magnet situated beneath the centre of the arc of vibration, so that a piece of soft iron carried by the pendulum bob is attracted, and thus the clock (which is kept running on a gaining rate) is retarded: the adjustment is made so that the amount of retardation is just sufficient to keep the secondary clocks beating in unison with the primary. The secondary clocks send hourly signals automatically to various places in their immediate vicinity, thus distributing the time over a large area. I am informed, however, by a gentleman who has recently been in Paris and examined the subject, that this system is one that is not now depended on.

(To be continued.)

American Fashions in Precious Stones.

By Geo. F. Kunz.

THE American spirit of unrest finds its outlet in an incessant desire for change and novelty. In this we are sharply distinguished from the French, English or German, who believe that a good thing once is a good thing always. For us a thing must not only have excellence, but it must also be new or unique to satisfy the demands of this American trait. So in precious stones very few escape the imperious edict of Dame Fashion, who is influenced largely by the demands of her American followers. It is my purpose to note in this article a few of the principal changes which have taken place within a recent period.

During the last decade new stones have come into favour, some neglected ones have regained their popularity, and still others, such as amethysts and cameos, have been ushered out entirely. The latter, no matter how finely cut, would not now find purchasers at one-fifth of their former value, while ten years ago they were eagerly sought after at from four to twenty times present prices. Rubies were considered high ten years ago, and a further rise was not looked for, but to-day they are still higher, a nine and eleven-sixteenths carat stone being quoted at 33,000 dols.

There is no demand at present for topaz, yet a syndicate of French capitalists has been organised to control the so-called topaz mines of Spain in the expectation that after twenty years of disfavour this gem will again find favour in the sight of fashion.

Coral has felt the change of fashion, for during the last three years less than 1,000 dols. worth per annum has been imported, and in the last ten years, in all, 33,956 dols., whereas in the ten years preceding 388,570 dols. worth was imported.

The popularity of amber, on the other hand is increasing. The imports of amber beads for the ten years, 1868 to 1878, were less than 5,000 dols. worth, whereas during the last ten years 35,897 dols. worth have been introduced. Amber amounting only to 47,000 dols. was imported from 1868 to 1878, but over 350,000 dols. worth from 1878 to 1888.

Ten years ago few of our jewellers carried more than the following stones in stock: diamond, ruby, sapphire, emerald, garnet, and, occasionally, a topaz or an aquamarine. The gem and mineralogical collections, however, contained a large series of beautiful stones, hard and of rich colour, that are now known as "fancy stones," and by the French as *pierres de fantasie.* Since then considerable interest has centred in these fancy stones, and a jeweller is not only expected to be familiar with, but to keep in stock almost all of these. This change may be partly referred to the fact that since the Centennial Exhibition art matters have received more attention among us than before.

That the Duke of Connaught gave his bride a cat's-eye ring as an engagement token, was enough to make the stone fashionable and to increase its value greatly. The demand soon extended to Ceylon, where the true chrysoberyl cat's-eye is found, and stimulated the search for it there. In the chrysoberyl cat's-eye the effect is the result of a twinning of the crystal, or of a deposit between its crystalline layers of other minerals in microscopic inclusions. If the stone be cut across these layers, *en cabochon*, or carbuncle-cut, as it is called, a bright line of light will be condensed on the dome-like top of the stone.

In the search for these chrysoberyl cat's-eyes, there have been found an endless series of chrysoberyls of deep golden, light yellow, yellow green, sage green, dark green, yellowish brown and other tints. They are superb gems, weighing from one to one hundred carats each, ranking next to the sapphire in hardness. They gave a great surprise to the gem dealers; for it was found that the darker leaf green or olive green stones possessed the wonderful dichroitic property of changing to columbine red by artificial light, the green being entirely subdued and the red predominating; and in fact were alexandrites, a gem which had formerly been found only in Siberia, and even there of poor quality though in large crystals, a perfect gem of even one carat being a great rarity. Here, however, fine gems rarely under four carats were found, and an exceptional one weighed sixty-seven carats. They can be numbered among the most remarkable of known gems. Strange to say, among these alexandrites a few have been found which combine the characteristics of the cat's-eye and the alexandrite, and are in reality alexandrite cat's-eyes.

The demand for the cat's-eye also brought into use the supposed rare mineral crocidolite, commonly called the tiger-eye, which has since been found to occur extensively in the Asbetus mountains, forty miles north of the Vaal River. It occurs in a ferruginous porcelain jasper, in veins from half-an-inch to four inches in thickness, and was first brought to Europe by Le Valliant, a French traveller in South Africa. Value has, more especially, attached to that variety which has been altered to a quartz cat's-eye. In this stone an infiltration of silicious material coated each fibre with quartz or chalcedony, giving it the hardness of the quartz and amethyst—seven in the scale of hardness. This pleasing stone readily sold for six dollars a carat, and at the outset even more; but owing to the excessive competition of two rival dealers, who sent whole cargoes of it to the London market, the price fell to one dollar, or even to twenty-five cents per pound, by the quantity. Even table-tops have been made of this material by veneering, and vases, cane heads, paper weights, seals, charms, &c., made of it have sold in large quantities. Burned, it assumed a bronze-like lustre, and by dissolving out the brown oxide of iron colouring, an almost white substance was obtained, which was dyed by allowing it to absorb red, green and brown coloured solutions, which, owing to the delicacy of the fibres, were evenly absorbed.

Ten years ago this material was practically unknown, but so extensively has it been sold, that to-day it is to be found on every tourists' stand, whether at the Rigi, on Pike's Peak, in Florida, at Los Angeles, or at Nijni Novgorod, showing how thoroughly organised is the system of distribution in the gem market. Missionaries have never spread a religion so rapidly as traders have disseminated this form of the "cat's-eye."

Since it has become generally known that Queen Victoria is partial to the opal, the old and stubborn superstition concerning it, which is said to date from Scott's Anne of Geierstein, has been slowly yielding, until now the gem has its share of popular favour. During the last two years ten times as many opals have been imported as were brought here during the preceding decade, many of these being the finest Hungarian stones. Mexican fire-opals are much more common, as tourists know to their sorrow who buy them at exorbitant prices in Mexico, hoping thus to pay the expenses of the trip, only to find, on reaching New York, that the opals are worth only about a quarter of what they paid for them.

The Mexican opal mines are near Querertera, and it is believed that a demand of 50,000 stones per annum could be supplied without raising the price perceptibly, since in the market of precious stones, the demand generally raises the price. The opal mines of Dubreck, Hungary, yield the government a revenue of 6,000 dols. annually; and the output is so carefully regulated by the lessees that the market is never glutted.

About ten years ago a new and very interesting variety of opal was brought from the Baricoo River, Queensland, Australia, where it was found in a highly ferruginous jasper-like matrix, sometimes apparently as a nodule and then again in brilliant coloured patches or in specks affording a sharp contrast with reddish-brown matrix, which admits of a high polish and breaks with a conchoidal fracture. Many of these stones are exceedingly brilliant. They are of the variety known as harlequin opals, their colour being somewhat yellow as compared with the Hungarian stone, although not less brilliant. The rich ultramarine blue opal is quite peculiar to this locality, and many have a rich green tint that makes them almost transcend the Hungarian opals.

A company capitalised at £200,000 has been formed, and the gems are soon likely to be extensively mined. Many curious little cameo-like objects, such as faces, dogs, heads, and the like, are made by cutting the matrix and the opal together.

Never have pearls been more popular or commanded such high prices as during the past ten years. At present nothing is considered in better taste than the pearl, on account of its purity and subdued beauty. This unusual demand has had the effect of greatly stimulating the search for them, especially on the west coast of Australia, at Thursday Island, the Sooloo Archipelago, in Ceylon and the Persian Gulf, and also along the coast of Lower California. The demand included pearls of all colours except the inferior yellow. The fine black pearls from Lower California have been in great request, single ones bringing as much as 8,000 dols. With these black pearls are found many beautiful grey and greyish-brown pearls. The different fisheries of the world produce fully 1,000,000 dols. worth annually, of which the Lower California fisheries produce probably one-sixth. Kentucky, Tennessee and Texas have given us over 10,000 dols. worth of pearls per annum; their remarkable fresh-water pearls, especially the pink ones, are unrivalled for delicacy of tint. The finding of two bushels of these in the Turner group of mounds in the Little Miami Valley, Ohio, by Prof. F. W. Putnam, gives us a faint idea of how plentiful they were before the arrival of the Europeans. But within the last five years many of the fancy-coloured pearls have received their variety of colour not from nature but by artificial means.

The acquisition of the Burmese ruby mines cost the British Government a vast sum of money. On the wars of 1826 and 1852 England expended 75,000,000 dols. and 15,000,000 dols. respectively, and after all this sacrifice of treasure the Burmah & Bombay Trading Company claimed, four years ago, that King Thebaw, of Burmah, had arbitrarily cancelled the leases by which the company controlled the output of the ruby mines near Mandalay. A meeting was accordingly held at Rangoon, October 11, 1884, presided over by J. Thompson, agent for Gillanders, Arbuthnot & Company (a firm of which Gladstone's son is said to be a partner), with a view to securing the lease of the mines. They did not succeed, however, and the war of 1886 which followed involved the raising of an army of 30,000 men and an outlay of 5,000,000 dols., but the British Government finally gained control of the long coveted ruby mines. The question which next presented itself was, how should they be worked? Several firms were desirous of securing the lease, and after the Indian Government had virtually closed a lease to Messrs. Streeter & Company, the London jewellers, at an annual rental of four lakhs of rupees (£40,000), for a term of five-and-one-half years, with the privilege of collecting thirty per cent. on all stones mined by others, for some unexplained reason, but probably on account of trade jealousies, the home government revoked the lease, although Mr. Streeter had apparently every assurance of the acceptance of his proposition and had even made preparations to begin work at the mines.

The ruby mines of Burmah are situated in the valley of the Mogok, fifty-one miles from the bank of the Irrawaddy River and about seventy-five miles north of Mandalay, at an altitude of 4,200 feet. Very little has been known concerning them up to the present, as they were always the monopoly of the crown and were jealously guarded. It is said that they paid King Thebaw's government 100,000 rupees per annum, and one year 150,000 rupees. Mining is carried on there by forty or fifty wealthy natives, who employ the poorer townspeople at liberal wages; but at present only seventy-eight mines or diggings are in operation, and they are worked in the most primitive manner. All the gems are sent to Ruby Hall, Mandalay, to be valued. At present the royalty exacted by the English Government is thirty per cent. A stone was lately sold in Mandalay for 8,000 rupees, but without the knowledge of the officials. In the valley a number of pagodas have been erected by wealthy ruby miners as votive offerings for their success.

One thing at least we learned from the British occupation of Burmah; namely, that King Thebaw did not own the dishes of rubies which were said to outrival anything in history. His possessions of this sort were found to consist only of a few stones of poor quality.

The diamond mines at Salabro, Brazil, known as the Canavieiras, were discovered in 1882 by a poor miner who had worked in the earlier mines. They are situated two days' journey from Canavieiras, near the River Pardo, and the gems, which are found in a red gravel at a depth of about two feet, are very fine in quality, and are remarkable for their purity and whiteness, the crystals being of such a form that scarcely any cleaving is necessary.

History repeats itself, and as, when the Brazilian mines were first discovered, the stones were sent to Europe by way of India to enter the markets in India wrappers, so Bultfontein diamonds were sent to Canavieiras to be shipped to Europe as the product of that mine. So great was the rush for these mines at first that, notwithstanding the rumours of a malarial climate and epidemic diseases, by the end of the first year 3,000 miners were at work where shortly before was a virgin forest, and for a time even this number was exceeded. The other Brazilian mines have been only slightly worked of late years.

India, Borneo and Australia are now yielding very few diamonds, probably not more than one per cent. of the entire product. These three countries, together with Brazil, yield probably less than ten per cent. of the total output.

The recent combination of the diamond mining companies in South Africa to regulate the production and price has led to a feverish speculation in diamond shares, and awakened interest in the mines of Brazil and India. During the past month the Madras Presidency Diamond-fields Company, Limited, has been organising with a capital stock of £190,000, and to prove that the Indian mines are not yet exhausted it is announced that operations will soon be commenced at Wadjra Karur Field, in the Madras Presidency. On this field of 554 acres was found a very fine sixty-seven and a half carat diamond crystal, which furnished a twenty-five carat stone called the Gor-do-Norr, valued by the company at £15,000.

Another English company has recently been formed under the name of the "Hyderabad Deccan Mining Company," to work the mines in the valley of Krishna, in India, where it is thought that the famous Koh-i-nûr diamond was found.

The author of *Arabian Nights* undoubtedly thought that he was imagining the wildest and most improbable things when he wrote of "Sinbad the Sailor" obtaining such fabulous treasures in the valley of diamonds. Yet the African mines have paled this profusion of wealth into utter insignificance. A glimpse at these new "diamond" valleys may be interesting.

The primitive method of diamond washing was carried on for centuries by thousands of slaves, who, like those who built the pyramids under the lash of the Pharaohs, simply followed a master, mercilessly goading them on whip in hand. To-day we have the most ingenious and powerful machinery, which, eyeless though it be, allows fewer diamonds to escape than would the keenest and most disciplined army of washers.

At the Kimberley diamond mines, in South Africa, a wonderful progress has been made in the last decade. About 1877 the work of consolidation of the different companies began. Originally the mines were worked as 3,238 separate claims, each thirty-one feet square, with a seven-and-a-half foot roadway between every pair of claims. Now those are all united in about forty companies.

A mine in the early days was a bewildering sight. Stretched across in all directions were miles of wire cable, to which were attached the buckets for carrying the earth, reef, or wall-rock of the mines, and, at times, water, all running from individual claims. Some of these were almost level with the surface, while others next to them might be cut down 200 feet, and others only 100 feet, yet all were being worked independently. At the sides were endless belts with pockets for carrying the earth. The result of this independent system of working was that rock was dropped so recklessly that it is said to have been as dangerous as the battle field around the edges of the claims. Not only was the loss of life great from this source, but also from the falling of immense masses of reef, loosened by the blasting, which sometimes buried a score of men at once. But improved methods were gradually introduced. Steam railroads were run down into the mine, and parts of it were levelled down even. Millions of tons of reef wanted removing, and the only way to do it was to assess every company in the mine proportionally. Many mistakes were made at first, if mistakes they can be called, when the problems offered for solution were entirely new and untried. The yellow or surface soil, which overlaid the blue stuff, pulverised so readily that it could be taken to the washing machine direct; but as the claims were sunk down in the blue, the rock grew harder, and dynamite became necessary. Immense quantities of it are now used for blasting.

Not only has the yield of the African mines been great, but the diamonds have averaged much larger than those from any of the old mines. The finding of a seventeen carat stone in the Brazilian diggings was sufficient to secure the freedom of the fortunate slave who found it: but stones of this size are found by the hundred here. A one hundred carat stone scarcely creates as much excitement as a stone of one-fifth the size did in Brazil.

One fifth to one-quarter of all the yield, it is estimated, never reached the proper owners, as the native diggers swallow and conceal the diamonds in every possible manner. Hence it became necessary for the companies, in self defence, to take extraordinary precautions against this great loss, and overseers or special searchers were appointed, who made the most thorough examination of all who left the mines. The natives use most ingenious methods for the concealment of the gems. On one occasion some officers, suspecting that a Kaffir had stolen diamonds, gave chase and caught up with him just after he had shot one of his oxen. No diamonds were found upon the Kaffir, it is needless to say, for he had charged his gun with them, and after the disappearance of the officers, dug them out of his dead ox. Diamonds have been fed to chickens, and a post-mortem recently held over the body of a Kaffir revealed the fact that death had been caused by a sixty carat diamond which he had swallowed.

On September 4, 1886, a meteoric stone weighing about four pounds fell at Nowo Urei, Krasnoslobodsk, in the Government of Penza, Siberia. In this, MM. Latschinoff and Jerofcieff found what they supposed to be diamonds of microscopic size. In an insoluble residue appeared small corpuscles, showing traces of polarisation, harder than corundum, having the density and other characteristics of the diamond, and present to the amount of one per cent. of the whole mass (see *Nature*, December 1, 1887). Through the courtesy of His Excellency Julien V. Siemaschko, of St. Petersburg, I procured a small piece of the meteorite. Small fragments of it were boiled first with nitric acid, then with sulphuric, then with nitro-muriatic acid, which removed the iron magnetite, olivine, enstatite, &c., leaving as a residue some small transparent bodies, about twelve in all. One of these, which was unfortunately lost, was evidently a distorted trigonal tris-octahedron. Those exhibited are very much distorted, and two resemble this form, which is one of the principal forms of the diamond. The colours are either pink or light brown. The smallness of their size has prevented me from trying the hardness, but by grinding with a sapphire four particles of the meteorite, I distinctly made a number of minute but deep scratches on each polished face of nine different sapphires with each piece of meteorite. These scratches are characteristic of but one mineral that we know, and that is the diamond. Pieces of the meteorite scratched nine sapphires, producing the fine delicate lines characteristic of a diamond, and there can be little doubt that these bodies, the only residue, were the ones that produced the scratches. If a larger quantity of materials come to hand, I intend to polish a diamond with the powder of the meteorite, using a new wheel for the purpose.

Some of that very curious form of diamond known as round bort, found only in Brazil, were exhibited at the Amsterdam Exhibition of 1882. They were perfect spheres, the result of a multiple twinning of the cubic form of the diamond. One of these Messrs. Tiffany & Co. cut into the rude outline form of a brilliant, and placed its table on an iron polishing wheel, with diamond dust on it, revolving at the rate of 2,800 revolutions per minute. The circumference of that part of the wheel on which the diamond was placed was about two-and-a-half feet. It remained there nearly one hundred days, ten hours per day, so that the surface which travelled over it amounted to over 75,000 miles.

Four and at times eight pounds of pressure were added to the usual two-and-a-quarter pounds and two-and-a-half pounds of the clamps or holder, while for a time forty pounds extra were added, causing the diamond to throw out scintillations several feet long. The wheel was ploughed up and ruined; yet no polish was produced, and the diamond was only slightly ground away after all this immense abrasion.

As an illustration of the labour and capital employed in diamond mining, it may be interesting to note that, in addition to many miles of aërial tramways, there are over one hundred and seventy miles of tramway around the four Kimberley mines. Twenty-five hundred horses, mules and oxen, and three hundred and fifty steam engines, shafts, &c., representing four thousand horse-power, are employed in the work. One million pounds sterling are annually expended for labour, and over £1,000,000 for fuel and other supplies. The gross capital of the companies is nearly £10,000,000. Over ten thousand natives, each receiving £1 a week, and twelve hundred European overseers, at an average wage of £5, are employed. It is now proposed to consolidate all the companies into an enormous diamond trust, with a capital of £10,000,000. At the present value of the shares they are worth £14,000,000, and the stocks fluctuate as much as our more active railroad securities.

The De Beers mine is now owned by one company, who also control the Central Diamond Mining Company, of the Kimberley mine. Mr. Gardner F. Williams, of Oakland, Cal., is superintendent of this mine.

In 1878 the importations of uncut diamonds amounted to 63,270 dols; in 1887, to 262,357 dols.; while in 1883 there were imported 443,996 dols. worth, showing that although we are cutting four times as many diamonds as we were in 1878, yet the importations have been falling off. This is partly because in the years from 1882 to 1885 a number of our jewellers opened diamond-cutting establishments, but have either given up the business or sold out to others; for in spite of the protective duty of ten per cent. on cut stones, cutting can only be profitably carried on here on a scale large enough to enable one of the partners to reside in London, the great market for rough diamonds, to take advantage of every fluctuation of the market, and purchase large parcels which can be cut immediately and converted into cash; for nothing is bought and sold on a closer margin than rough diamonds.

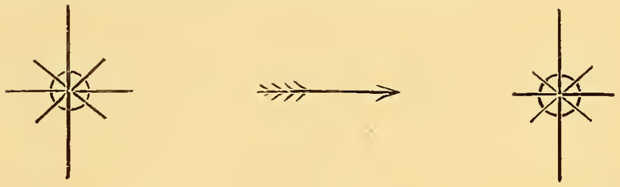
The recent death of Mr. Henry D. Morse, of Boston, known as the pioneer diamond cutter of the United States, brings to mind many interesting reminiscences. He has scarcely received the credit he deserves for his work. That he was the first in this country to cut diamonds is well known, and the best cutters in the United States to-day received their training under him. But educating young Americans, both men and women, to the art, was not his greatest work. He showed the world that the art which had so long been a monopoly of the Hollanders, was degenerating in their hands into a mere mechanical trade. His treatment of the diamond gave a great stimulus to the industry both in the United States and abroad, and shops were opened here and in London in consequence of his success. He was one of the few who studied the diamond scientifically, and taught his pupils that mathematical precision in cutting greatly enhances the value as well as the beauty of the gem. His artistic eye, sound judgment and keen perception enabled him to carry the art to a perfection seldom, if ever, attained before.

It was in his shop that a machine for cutting diamonds was invented which did away in great measure with the tediousness and inaccuracy of the old manual process. Thanks to his labours, we now have among us the best cutters in the world, men who can treat the diamond as it should be treated to develop its greatest beauty. The fact that so many fine stones were re-cut here after he started his wheel, led to a great improvement in cutting abroad, especially in the French Jura and Switzerland, where both sexes are now employed at the trade. As a result of this, the diamonds sold to-day are decidedly better cut than those of twenty years ago, before Mr. Morse turned his attention to that work, which he, above all others, has shown us is properly an art, and not an industry.

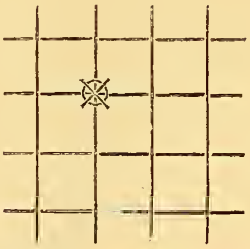
There are at present about twelve cutting establishments in this country employing from one to fifty men each, and in all about one hundred, at salaries ranging from twenty to fifty dollars per week. Most of the cutting done here is of a high class, some shops being almost entirely employed in re-cutting stones that had been cut abroad. Ten years ago nearly all the diamonds used in the United States were purchased through brokers or importers. To-day, owing to the marvellous growth of the diamond business here, and the facilities for transatlantic travel, many of the large retail houses buy their diamonds direct in the European markets; and some have even established branches or agencies abroad.

The New Micrometers for the Lick Observatory.

A BEAUTIFUL filar micrometer has been made for the large equatorial by Messrs. Fauth & Co., of Washington. The design for this micrometer, after having been drawn by the makers, was revised by Mr. Burnham, one of the astronomers of the observatory. The completed instrument is said to be very convenient in every respect. The makers say that after many trials they made a screw which is perfectly satisfactory to them. It is used to measure the distance apart of two stars A and B, by placing a fixed spider line over A and moving another spider line by the screw until this latter line bisects the star B. The distances apart of double stars, of satellites from their planets, &c., may be so measured. The angles of the lines A, B, with the meridian can be measured on the *position circle* attached to the instrument.



A.—Fixed Web. B.—Moveable Web



A so-called *duplex* micrometer has been provided by Sir Howard Grubb, of Dublin. The idea of this instrument was published by Alvan Clark, Sen., long ago, but only one was made by him. In its improved form it ought to be a most useful instrument. It consists essentially in a glass plate ruled off into squares and viewed by *several* eye-pieces. To measure the distances apart of two stars, A and B, the telescope is moved until the star A is under the central eye-piece. The telescope is kept always directed on this star by means of the driving clock, and the star is placed on the intersection of two of the lines ruled on the glass plate, as shown in the illustration. The other star, B, is now placed under one of the eye-pieces movable in the straight grooves, and the distance of B from the nearest line ruled on the glass is measured by a spider line attached to a micrometer screw in the usual way. The advantages of this form of micrometer are two. In the first place, long distances can be measured, since the eye-pieces over A and B may be much further apart than the field of a single eye-piece; and, second, the screw of the micrometer is used only to measure small arcs. The largest part of the distance of A and B is determined by counting the number of squares of the reticle included between them.

The Romance of a Diamond.

COLONEL YULE, whose memory and learning hold the gorgeous East in fee, is, according to a contemporary, going to solve the problems of the history of the Pitt Diamond. Every one has heard that

> Asleep and naked as an Indian lay,
> An honest factor stole a gem away.
> He pledged it to the Knight; the Knight had wit;

and then, as Mr. Courthope shows, Pope had originally written,

> So robbed the robber, and was rich as P——.

This rather palpable insinuation against Thomas Pitt Mr. Pope suppressed, and preferred the reading,

> So robbed the robber, and the rogue was bit.

The story of some dishonesty in the procuring by Pitt of his famous diamond has been told in many manners and picturesque. Colonel Yule, who is about to publish for the Hakluyt Society a volume of "Documentary Contributions to the Biography of Thomas Pitt," has printed, but not published, the papers which refer to the diamond. These are but a small part of the documents in the case of a great shaker of the Pagoda tree in the early years of the eighteenth century. From 1698 to 1709 Pitt, Governor of Madras, engaged in a trade in diamonds and beaver hats. The hats he shipped to Pegu and Achin, the diamonds he sent to Europe. In 1701 Pitt's London agent seems to have put him on the quest of big diamonds. Like Lothaw in Mr. Bret Harte's parody, he wanted expensive ones. On November 6, 1701, Pitt sent home the model of a diamond weighing 426 carats. "As stones goe, I thinke 'tis inestimable," he writes, and he has found nothing like it in Tavernier. That amusing old merchant in the second volume of his book of "Six Voyages" (Paris, 1679) publishes engravings of enormous diamonds. Like the hero of the farce, he might have cried "Happy Tavernier, they're woppers." Table-shaped, egg-shaped, dome-shaped, white, and in one case blue, the diamonds of Tavernier might be worshipped by Christians, at least by most Christian Kings, as well as by the infidels of Mr. Pope's ingenious poem. But Pitt's was a greater "wopper" than any of these. He much regretted having to send his "great venture" home "in one bottom," as we read in the letters Colonel Yule has printed. But you can hardly send one diamond home in two bottoms, and Pitt designed his treasure for "a single stone." The model of the stone in the rough displays an irregular shaped pebble, not very unlike a very shapeless hat, and about the size of a small duck's egg. But when the diamond reached England the French King "has his hands and heart full" of war, "soe he can't buy such a stone, there is noe Prince in Europe can buy it." Pitt writes, however, that "the King of Ffrance or Spaine will in all probability be the likeliest chapmen for it." But the patriotic Pitt hoped that, in case of our succession war, the city or the nation might buy his diamond as a present for the Crown. He writes exactly in the sense and almost in the words of Molière's M. Josse, "If we are soe lucky to put Charles on the throne of Spaine, I know nothing he can purchase to make his acknowledgments to our Queen soe acceptable as that matter." Verily, *vous êtes orfévrier, M. Josse!*

Pitt's anxieties while the diamond was out of his keeping in Europe may readily be imagined with no great expenditure of fancy. "I believe it will be securest in an Iron Chest at the Bank, each of you a different key." "I am not a little jealous, too, of my sone, therefore pray take care now that he do's not strip me," and he "wishes that his sone may deserve a better character." Moreover, he has heard that, on the passing of the Union with Scotland, "it is intended to present the Queen with the Royal title of Empress. I am sure no thing is soe proper to accompany it as the diamond, "being the biggest and best in the world." *Vous êtes orfèvre, M. Pitt.* The main facts in the jewel's later history are well known. The Regent bought it, as a point of "honour," in spite of empty coffers, and the great poverty of France. It was stolen after the September massacres, when all Paris was turned upside down. Marat naturally accused the Royalists of stealing it to discredit the amiable administration of the moment—an old and well known trick. It was recovered, found hidden in the rafter of a house, and is now in the possession of the French Republic. A "chapman" for it would be hard to find, except, perhaps, in America. If ever purchased from the Republic surely the buyer will hail from Chicago or San Francisco. But the question as to how Pitt got the diamond has yet to be settled. Was it the eye of Juggernaut? In its rough shape, a mere lump of alum as it seemed, the god would hardly have boasted an eye that was so unlike "the shining eyes" of Zeus. Did Pitt actually lose by his purchase, and did he pay a large sum for it to "a rich black merchant in the Mogull's camp?" Pitt himself, in a document written at Bergen, and attested by solemn oaths, declared that charges had been brought against his character in the affair.

The real story has nothing of romance, as stated by Pitt. How the diamond came into the hands of Jaurchund, the diamond merchant, Pitt did not know, or does not say. All that may be romantic enough, and full of stratagems and spoils. But he merely purchased the diamond from Jaurchund, after the usual process of Oriental haggling. Jaurchund put up his prize at 200,000 pagodas. Pitt bid 30,000, and the two dealers parted. Next, Jaurchund came down to 100,000 pagodas, next to 55,000, while Pitt rose to 45,000. Finally they "dealt" at 48,000, "which I paid very honourably, as by my books appear. And thereby further call God to witness that I never used the least threatening word at any of our meetings to induce him to sell it to me." Indeed Pitt had many later dealings with Jaurchund, and left money in his hands, "trusting him preferable to all other diamond merchants." However, Pitt "lay out of his money" till 1717, when the Regent bought the diamond. An account of the transaction survives in the writing of Philip, second Earl Stanhope, the grandson of Pitt. What Pitt got cannot be ascertained. Three boxes of jewels were deposited as security for the large unpaid part of the price. The Regent's debt was never defrayed, and no one knows what the three boxes of jewels were worth. Thus it is very possible that Pitt, too, was "bit," and that France has, in the great diamond, an uncommonly cheap stone—the queen of all diamonds in the known world. And what will be the future history of the pebble that Pitt, Danton, Roland, and "the Aristocrats" were all, at one time or other, accused of stealing? Who would willingly own so much anxiety? It was only the great English administrator, according to the story, who could stuff the Koh-i-noor in a piece of brown paper, put that in his waistcoat pocket, and then give the garment away, forgetful of the value of a stone which appealed neither to his cupidity nor his imagination. Of the Pitt diamond the future historian may have to say "its end was pieces," for if ever it be sold, more probably it will be sold in fragments than as a single jewel.

Lead Solders, Hard and Soft.—The following Table is intended to be used as a handy guide with the articles in repairing various kinds of jewellery:—

No.	Tin.	Lead.	Bismuth.	Point of Fusion Fah.
1	1 part	25 parts	0	558
2	1 ,,	10 ,,	0	541
3	1 ,,	5 ,,	0	511
4	1 ,,	3 ,,	0	482
5	1 ,,	2 ,,	0	441
6	1 ,,	1 ,,	0	370
7	1½ ,,	1 ,,	0	334
8	2 ,,	1 ,,	0	340
9	3 ,,	1 ,,	0	356
10	4 ,,	1 ,,	0	365
11	5 ,,	1 ,,	0	378
12	6 ,,	1 ,,	0	381
13	4 ,,	4 ,,	1 part	320
14	3 ,,	3 ,,	1 ,,	310
15	2 ,,	2 ,,	1 ,,	292
16	1 ,,	1 ,,	1 ,,	254
17	1 ,,	2 ,,	2 ,,	236
18	5 ,,	3 ,,	3 ,,	202

A. O.

New Book.

Electro-Plating. By J. W. Urquhart, C.E.*:—The second edition of this well-known work has now appeared, and the growth of the interests to which it applies makes its appearance at the present time extremely opportune. Its publication has indeed been rendered necessary by the advancement of science in the direction of the deposition of various metals, the enormous increase in the variety of articles coated by the electro-metallurgic process, and the introduction of the dynamo-electric machine as a source of electricity. While plating by the new method is carefully treated of in such a complete way as to bring the present edition quite up to date, the exposition of the art of electro-metallurgy forms a compendium on the subject that will render the work exceedingly valuable as a book of reference both in the plating shop and to the general amateur. The author states it as his belief that any ordinary intelligent man may become an expert in electro-deposition with little or no knowledge of science, and, to this end, he has put in plain words and in a concise form working directions, that treated more elaborately would be necessarily somewhat confusing, which should go far to make the beginner's path easy. The text is elucidated where necessary by means of excellent illustrations.

Gazette.

Partnerships Dissolved.

Mills & Billiter, Percival Street, Clerkenwell, watch material dealers. H. & E. Gaydon, Richmond and elsewhere, jewellers. J. & J. W. Taylor, Birmingham, manufacturing jewellers. Stevens & Malone, Lower James Street, Golden Square, manufacturers of dressing cases. Lee, White & Co., Sheffield, Britannia-metal manufacturers. Mary Price, E. Price, and W. Price (trading as Joseph Price), Sheffield, silversmiths, so far as regards E. Price. H. & E. J. Dale, Kirby Street, Hatton Garden, and Ludgate Hill, City, electricians. Costello & Wilford, Leicester, cutlers.

THE BANKRUPTCY ACT, 1883.

Receiving Orders.

To surrender in London.—Louis Benkel, Stoke Newington Road, watchmaker. Gustave Deal, late Hatton Garden, City, jeweller. Alfred Peplow, Central Street, St. Luke's, general metal spinner. Edward John Bone, Fulham Road, watchmaker. Alfred Faulkner, Mare Street, Hackney, jeweller.

To surrender in the Country.—Margaret Phillips (trading as P. Gabriel & Co.), Liverpool and Southport, jeweller.

Public Examination.

L. Benkel, Stoke Newington Road, watchmaker; August 8, at 12.

Adjudications.

In London.—A. Faulkner, Mare Street, Hackney, jeweller. L. Benkel, Stoke Newington Road, watchmaker. G. Deal, Baalbec Road, Highbury, jeweller.

In the Country.—M. W. Dunscombe, Bristol, optician.

Notices of Dividends.

In the Country.—T. Turner, Whitby, jet ornament manufacturer; 1*s.* 4*d.*, first and final; July 31, Official Receiver, Middlesborough. S. Ruthstein, Cadoxton-juxta-Barry, Glamorganshire, pawnbroker; 1*s.* 10*d.*, first and final; Official Receiver, Cardiff. J. Palin, Nantwich, jeweller; 7*s.* 6*d.*, composition; forwarded by cheque to postal address. H. S. Ansell, Birmingham, jewellers' case manufacturer; 5¼*d.*, first and final; 25, Colmore Row, Birmingham.

Scotch Sequestration.

W. Taylor, Forfar, watchmaker.

Applications for Letters Patent.

The following List of Patents has been compiled especially for *The Watchmaker, Jeweller and Silversmith*, by Messrs. W. P. Thompson & Boult, Patent Agents, of 323, High Holborn, London, W.C.; Newcastle Chambers, Angel Row, Nottingham; and 6, Lord Street, Liverpool.

9,221. T. C. Mills, Belfast, for "Improvements in clasps and solitaires for holding or fastening various garments and furnishings." Dated June 25, 1888.

9,245. G. R. McDonald, Peckham, for "Improvements in studs and solitaires, and other similar articles." Dated June 25, 1888.

9,265. A. J. Boult (a communication from Gustav Hermann, Kluge, Germany), for "Improvements in or relating to musical boxes or clocks." Dated June 25, 1888.

9,292. T. Greaves and C. J. Dunlop, Birmingham, for "Brooch flower holder." Dated June 26, 1888.

9,580. J. F. Fairley, of the firm of Fairley & Sons, Birmingham, for "Improvements in solitaires, buttons, and other such like articles." Dated July 2, 1888.

9.592. H. Jacot-Burmann, London, for "Improvements in watches." Dated July 2, 1888.

9,593. F. Köh'e-Isely, London, for "Improvements in watches." Dated July 2, 1888.

9,626. W. H. Blackwell, Sheffield, for "A new or improved watch protector." Dated July 3, 1888.

9,713. T. Hawkins and W. Hawkins, Portsmouth, for "Improvements in protectors, or safety catch-springs, for securing brooches and other articles of jewelry." Dated July 4, 1888.

9,724. A. Edwards, Birmingham, for "Improvements in watches." (Complete specification.) Dated July 4, 1888.

9,726. H. Binko, London, for "Improvements in alarm clocks." Dated July 4, 1888.

9,685 C. Imray (a communication from Hugues Rime and La Société Armand Schwob et Frère, France), for "An improved watch with transparent body." Dated July 6, 1888.

10,027. A. Edwards, Coventry, for "Improvements in watches." (Complete specification.) Dated July 10, 1888.

10,223. J. S. MacArthur, R. W. Forrest, and W. Forrest, London, for "Improvements in extracting gold and silver from ores or other compounds." Dated July 14, 1888.

10,302. H. Turler and C. Turler, of the firm of Turler Frères, London, for "An improved chronometer." (Complete specification.) Dated July 16, 1888.

10,334. J. Nicholas, Ilford, for "Improvements in the extraction of gold, silver, and platinum from their ores." Dated July 17, 1888.

Recent American Patents.

Alloy. C. A. Paillard	384,709
Alloy. C. W. Ward	384,731
Banking Device for Timepiece Escapement. L. Aeby	384,670
Bracelet Chain. G. A. Lenau	385,313
Clock Dial. A. Bannatyne	385,160
Clock Striking Mechanism. C. E. Burnham	384,191
Cuff Holder. A. W. Sawyer	384,722
Die for rolling articles of metal. D. E. Kempster	385,186
Electric Pendulum Clock. A. L. Parcelle	384,271
Electric Winding Attachment for Clocks. A. J. Reams	384,472
Eyeglasses. A. Schultze	384,475
Finger Ring. W. P. Sinnock	385,073
Frame for Spectacles or Eyeglasses. F. A. Henninger	385,307
Gem Setting. W. G. Smith	384,399
Hairspring Collet and Stud. H. Huguenin	384,166
Locket. J. Cohn	384,426
Method of making Buttons, &c. S. Cottle	384,192
Mug. Z. T. Hall	385,179
Opera, Field, or Marine Glass. W. A. Cardwell	384,122
Ornamental Metallic Surface. F. Rhind	384,282
Pendant Setting. J. T. Joyce	384,629
Ruby Pin Setter. F. Hyde	384,693
Ruby Pin Setter. P. Ramser	384,544
Spectacle Bridge. G. Johnston	384,260
Spectacle Temple. M. A. Vanderwaag	384,481
Stem-winding and Setting Watch. L. Aeby	384,669
Time Ball. C. Muller	384,996
Timepiece. C. Bickford	384,737
Watch Case. E. C. Chappatte	384,346
Watch Case. E. F. Heffernan	384,623
Watch Case. C. F. Morrill and D. C. Percival	384,380
Watch Case. R. J. Quigley	384,640
Watch Hairspring Stud. L. Aeby	384,668

A printed copy of the specifications and drawing of any patent in the American list, also of any American patent issued since 1866, will be furnished from this office for 2s. 6d. In ordering, please state the number and date of the patent required, and remit to J. Truslove, Office of *The Watchmaker, Jeweller and Silversmith*, 7, St. Paul's Churchyard, E.C.

Correspondence.

All Letters for Publication to be addressed to the Editor *of* The Watchmaker, Jeweller and Silversmith, 7, *St. Paul's Churchyard, E.C.*

All communications must bear the name and address of the sender, not necessarily for publication, but as a guarantee of good faith.

To the Editor of *The Watchmaker, Jeweller and Silversmith.*

STRIKE IN THE WATCH CAP TRADE.

Sir,—The watch cap makers of Coventry have combined for the purpose of rising the price of caps. If they are well advised this should be a good sign showing a much greater demand for Coventry watches. No doubt cap makers, as in all other branches of the trade, have suffered very severely from the depression in this industry, and the recent rise in copper has added the proverbial straw. But are they not asking too much at once? a rise of 3s. or 4s. per dozen must at the present time mean rather a serious item to watch manufacturers, and if followed by a demand for increase in other branches would perhaps, with the present keen competition from machine and foreign watches, prove a death blow to cheap English work. Would it not be better for them to exercise a little further patience until the demand becomes more substantial, when they would have firmer ground to stand upon? It is to be hoped in the interest of the trade generally, that wise counsels will prevail and arrangements be quickly made which will be satisfactory to all parties concerned.

---

* London.—Crosby Lockwood & Sons, 7, Stationers' Hall Court. Price 5s,

Yours etc.,

W. Terry.

Spon Street, Coventry, *July* 21, 1888.

P.S.—Since writing the enclosed I hear that most of the manufacturers have given the cap makers what they demanded. I still think if the cost of Coventry watches is to be increased they will be shut out of the market.

[Should the watch cap makers continue recalcitrant, the remedy is in the manufacturers' own hands. They have only to abandon an obsolete form of movement in favour of the modern form. Such a consummation of the affair is devoutly to be wished for.—Ed.]

Buyers' Guide.

The Sheffield Smelting Company, Sheffield, *Sell* Gold and Silver (pure and alloyed). *Buy* all materials containing Gold and Silver.

Jones, E. A., Wholesale Manufacturer of Whitby Jet Ornaments. A Large Assortment of the Newest Patterns always in Stock. Export Orders promptly executed. Persons not having an account open will avoid delay by forwarding a reference with their order. Customers' Matchings and Repairs with despatch. 93, Hatton Garden, London, E.C.

S. Ockenden, Chronometer and Watch Jobber to the Trade, 155, Goswell Road, London. Staffs, Pinions, Cylinders, Conversions, &c. Price list on application.

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The Watchmaker, Jeweller and Silversmith.

A Monthly Journal devoted to the interests of Watchmakers, Jewellers, Silversmiths and kindred traders.

Correspondence.—Correspondence is invited on all matters of interest to the trade. Correspondents will please give their full address in each communication, not necessarily for publication, but as a guarantee of good faith.

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Editorial.

THE Deeds of Arrangement Registration Act is likely to prove a great and permanent benefit to the trading community. Since January 1, when it came into operation, the number of arrangements registered in various trades is said to have far exceeded the expectations of the original framers of the Bill. This is perhaps the best possible proof that such an addition to the Bankruptcy Act was needed, and is likely to inspire traders with greater confidence, and in promoting the opening of fresh accounts, lead to a general extension of business. "The working of the Act has been very satisfactory," says the *British Mercantile Gazette*, "so far as the registration itself is concerned, but one would like to have seen a fewer number, for there seems to have been an unusually large crop since the Act came into operation." We entirely agree with our contemporary in this and other remarks on the same subject, for while it is matter for congratulation that the early part of the year has been comparatively free from causes for invoking either the old law or its addition among our constituents, it is greatly to be feared that several recent heavy failures will do much to put the average for the whole year on a par with that of some of its immediate predecessors, it being a recognised deduction from business experience, that where a failure larger than the ordinary occurs, others are usually involved to the extent of failure also. But, although it may not at first sight appear so, there is some consolation to be derived from the previous considerations, for if the number of failures and depression of trade were in the same ratio, every fresh registration would have a disturbing and prejudicial effect on every-day business. That it is not so, however, is well known, and if we have occasionally to deplore particular cases, we have in the present instance the satisfaction of knowing there will be a substantial set-off for the year on the side of trade prosperity as compared with former years, and it is better that a few should go to the wall altogether, than that the whole community should be in a state of semi-starvation—that is, if it be not a state of effect and cause.

ONE of the most interesting exhibits at the Italian Exhibition, in London, is a collection of cameos shown by a Signor de Giovanni. The cameos are the work of six young ladies whom Signor de Giovanni is instructing at a college for young women, near Bedford. As works of artistic merit the cameos here shown are far ahead of any of the native Italian productions with which the Exhibition is flooded. Whether it is that the art of cameo-cutting has deteriorated in Italy or that the exporters have relied on the want of English taste, it is well-known that the wearing of cameos has been long almost discontinued in our fashionable circles, owing to the inferior designs and workmanship of the articles obtainable, and it will be interesting and instructive to our jewellers to note if the production of really meritorious work should lead to a change of fashion in this direction, and the introduction into the trade and country of a new, or at all events, a lost industry. "English-cut cameos" is a taking phrase, and the subject should not be lost sight of by our jewellers.

WE publish on another page a letter from Mr. W. J. Thompson, Secretary of the Coventry Watch Cap Makers' Association, in reply to the letter from Mr. W. Terry, which appeared in our issue of last month. With the first part of the letter we have no concern, save to observe that Mr. Terry's remarks do not appear to us to have called for quite so indignant a response as to be told to mind his own business (it is quite proper for a member of a trade to discourse trade topics in his trade journal); and whether the price per dozen of watch caps be raised one shilling or twenty shillings, is a question for settlement between the makers and users of these necessary (or unnecessary) articles. As for ourselves, we entirely disclaim all uncharitableness towards any section of the trade in any remarks we make, have made, or shall make, concerning trade matters. We desire the welfare of the English trade as a whole; that is our sole aim, and that is the sole end to which our observations are intended. Mr. Thompson gives as his reason for advocating the capped movement "because it is the English form." A better reason would have been "because it is best." As to the universal adoption of the best form of movement for English watches destroying the trade by doing away with a distinction, which is no distinction (or, if it is a distinction between English and foreign work, is also a distinction between the best and the worst class of the former), that is an argument which in the present state of trade enlightenment is hardly worth the consideration of practical minds, or (since our correspondent is fond of a simile) that would have equal weight in favour of the retention of the verge escapement.

LORD GRIMTHORPE, President of the Horological Institute, was born at Carlton Hall, Yorkshire, in 1816, and is therefore 72 years of age. He has been Chancellor of the diocese of York since 1877, and is now said to be contemplating the gift of £10,000 towards providing a suffragan bishop for the archdiocese. His keen interest in church affairs no less than his concern in all that appertains to horology—is well known, and it is to the weight of his authority on both subjects that the turret clock trade of the country, to no small extent, owes its present prosperous condition.

General Notes.

REPORTS from Sheffield state that, although the home markets are dull, cutlery, edge tools and all classes of silver and plated goods keep in active request on foreign account.

THE *Revue des Bijoutiers, Orfèvres et Horlogers* is the title of a new trade journal published in Paris, and *paraissant tous les dimanches*. The publication office is at 10, rue de la Perle, and the manager is Mons. A. Didier, whose name is well known as a frequent correspondent of other French technical journals. We are glad to hear that he has recovered from the ophthalmic affection which troubled him, and, in placing his journal on our exchange list, wish the new venture every success.

AS set forth on the title-page, the *Revue* is published in the interests represented by the Syndical chamber of "*Bijouterie, Joaillerie*," &c., and as the French use these terms to denote separate branches of what we generically call "jewellery," an explanation of their distinction may be of interest.

ON the authority of Mr. N. S. Maskelyne, the latter term expresses a class of personal ornament in which precious stones, facetted or *en cabochon*, or pearls, are the principal feature—the precious metals forming little else than the groundwork for retaining and exhibiting the stones. The bijou, on the other hand, is essentially an ornament in gold or silver wherein precious stones are but ancillary to the metal, or whereon enamel is more or less liberally used as an enrichment.

THE value of the distinguishing terms is not very apparent to one who is in the habit of employing the one word to express all classes of personal ornament constructed in the precious metals; and, as Mr. Maskelyne observes, a logical division, even with the use of the French terms, is not very easily made.

THE American usage of the term "jeweler" is even more comprehensive than the English; a trans-Atlantic "jeweler" being generally understood to be not only a jeweler, but also a watchmaker (or at all events a dealer in watches).

THE last number to hand of the *Revue* contains a biographical sketch and portrait of the late Julian-Hilaire Rodanet, father of the distinguished president of the Paris Horological School. An evident misprint puts the year of his birth as 1880, and we can only gather from the context that he was born at Rochefort-sur-Mer in 1820. After an apprenticeship with a Mons. Merceron at Angoulême and a sojourn in Paris until 1837, he returned to his native town, where he founded a school for watchmakers, which, according to the memoir, was the forerunner of the present Paris school. He was greatly distinguished in his profession, was member of the Rochefort Chamber of Commerce, and a chevalier of the Legion of Honour; he died in 1884. His portrait is that of an intellectual-looking, handsome man of about 60, with pronounced features of a somewhat judaical type.

AS the Elcho Shield will be on view at the Irish Exhibition, Olympia, for the next month or two, visitors to whom it may be an object of attraction, will have an opportunity of judging for themselves the justness of the strictures passed upon it by Mr. G. J. Cayley, in his report on the gold and silver plate at the Paris Exhibition of 1867.

HE says:—"The International Elcho Shield, the model of which seemed very promising a few years ago, has been terribly vulgarised in the execution. All workmanlike genuineness of texture has been lost by an application of cheap and common acid-bitten engraving in stiff and common diaper work, where the level surfaces ought to have been enriched by the hammer and chisel with some deftly-interwoven design of roses and thistles congenial in design with the hexagonal scheme of the shield. Instead of being, as the model promised, a noble piece of iron *repoussé*, it has all the character of ornamental cast-iron work usually employed in decorating fire-places and fenders."

Under the auspices of the Society for Promoting Village Industries, an association has been established and registered under the Provident Societies' Act as "The London Watch Manufacturing Co-operative Society, Limited." The offices are at 57, Myddelton Street, E.C.

The Amalgamated Watch Jewel Makers' Co-operative Society of Coventry, which was recently started, is now working successfully, and supplies the trade with every description of jewel holes. All particulars can be obtained from the Secretary, Mr. William Garner, 19, White Friar's Lane, Coventry.

Moonstones with diamond and ruby settings are in high favour among Paris fashionables. They are sold in sets of three; such as a small circular brooch and a pair of large-sized earrings, with perhaps a hairpin to match, the stone in the latter being generally a conical one. The touch of red brightens up and enhances the cold, white, lunar effect of the stone.

We note a rather important innovation in the Parisian fashion in respect to the wearing of diamonds. Henceforth their use is not to be entirely restricted to married women. Unmarried French girls may wear small diamonds in their ears and plain gold circlets with single tiny brilliants set in the middles. The stones for the purpose are distinguished by Parisian jewellers by the name of *gouttes d'eau* and weigh about a sixteenth of a carat.

There are now on exhibition at the Cutlers' Hall, Sheffield, specimens of tools sent by Mr. Consul Ottenham in transmitting his report on the trade of Chin-Kiang. These tools were received in the first instance by the Foreign Office, and by order of the Marquis of Salisbury were forwarded to the Sheffield Chamber of Commerce, for the benefit of local manufacturers, who can inspect them.

The Canadian Association of Jobbers held an important meeting on July 13, at which several representatives of watch and watch-case companies in the United States were present. The trade lists were revised, the prices of all watches being reduced. Gold watch cases were brought within the rules of the association, and the product of the Montreal Watch Case Co. were put upon the list.

Among the many distinguished men who have been deeply interested in horology is Prince Maximilian, of Bavaria, whose diamond wedding has lately been celebrated at Possenhofen. He has never occupied himself with politics, having spent all his life in rural pursuits and amateur clockmaking, and as his 80th birthday finds him still a hale and hearty old gentleman, it is to be assumed that the latter pursuit, when divorced from other causes of attrition and worry, is directly conducive to a peaceful state of mind and consequent longevity.

The "deaf and dumb" boy so touchingly alluded to in the recent Classes report of the Horological Institute, is not by any means dumb, as the variety of noises he can contrive to make would fully testify to anyone who had the pleasure of his society for a half-hour. He is a native of Nicaragua, in Central America, is a well set-up, bright, intelligent lad, and is about sixteen years of age. His name is Julio Vivas; he manages to make himself understood by means of a mixture of signs and speech, the latter of which he has somewhat imperfectly acquired under the "German" system of tuition.

Referring to the "Night and Dreamland" table of the late Morel Ladeuil, of which mention was made in the memoir in our July number, the same authority said that it was seen to much greater advantage at the Exhibition of 1862, the loyalty of the Birmingham ladies having since disfigured its base with some gold and enamel escutcheons; and the unæsthetic industry of the housemaids of Marlborough House or Sandringham, to whom the soft tints of the sculpture seemed too dull to be ornamental, having considerably damaged its superficies by vigorous application of emery or rotten-stone.

The text of the new Swiss patent law which has been adopted by the Federal Chambers, is now published; it will come into force on October 2, next. The duration of each protection will be five years from the date of the application, and for each patent granted, in addition to a depôt tax of 20 francs, an annual progressive tax will be made as follows:—for the first year 20 francs, for the second year 30 francs, for the third year 40 francs, and so on, up to the fifth year, for which the tax will be 160 francs.

American music box dealers are said to be preparing for an unusually large demand during the coming fall. Last year saw more houses successfully engaged in this business than at any time heretofore, and music boxes, in view of their many improvements and cheapness of price, are now very popular. Most of the boxes sold now-a-days, even to the cheaper grades, have interchangeable cylinders, and are thus capable of producing an unlimited number of airs. Other improvements pertain directly to the movement and commend themselves to practical jewellers. A jewellery stock without a few musical boxes is incomplete; and the fact that so few are carried in stock by jewellery stores accounts for the other fact that the large dry goods bazaars have them on sale in large quantities.

Too Many Diamonds.—A Correspondent of the *Daily News* writes from Johannesburg:—"Were the four great mines of the Diamond Fields worked as one concern, the directors could proceed to limit the output of diamonds, a step which, from the glutted state of the European diamond market, will be necessary at a near date, for present values nearly touch the cost of production. It is even possible that the costly gem may be found in many fresh places and become so common that it will not pay to mine, unless some fresh use should be found for it similar to that for boring purposes, some practical use in fact that will consume a great many stones and keep up the price. Lately it has been asserted that a diamond was found on the property of one of the Witwaterstrand gold mining companies. We hear reports of diamonds being found in the district of Hope Town on the Orange River, up in the Waterberg in the Transvaal, and near Lady Brand in the Orange Free State. It is stated in the newspapers to-day that a large parcel of the stones is being shown at Lorenzo Marquez on the coast, believed to have come out of the Lebombo mountains, the region supposed to be the scene of King Solomon's mines. It is not improbable that there may be diamonds in all those places. In any case there is always the fear that the world may shortly see a surplus. As it is the market is temporarily glutted, and will be for some time if they do not limit the production at Kimberley."

The Diamond Market.—The promises of the latter part of July have not been more than partially fulfilled as far as the Amsterdam trade is concerned. The little demand there was has continued, and is, according to "*De Diamant*" rather increasing than otherwise, which is taken as a matter for congratulation at this time of year. Prices are bad for sellers, with a slightly upward tendency. There is an increased demand for *rough*, and the factories are now working more hours.

The *Paris* market has been somewhat disturbed by the recent strikes. Prices are bad for sellers. The business done lately has been mostly for the American market. The Steamers "Gascogne" and "La Normandie" left with 31 and 15 parcels, respectively, of diamonds and other gems.

An ordinary market has characterised the *London* trade of the month, the demand being mostly for middling stuff and for cleavages, and slight givreaux or picked. Prices continue very firm. The Steamers "Moor," "Warwick Castle," "Spartan," "Garth Castle," "Athenian," and "Hawarden Castle," arrived since our last report and all kinds of stones, including yellows, coloured and chips are in abundance.

Kimberley advices report an active demand for all classes of goods; market firm, with prices tending to rise.

Silver.—Little fresh business is reported in this market and quotations are nominally unchanged, viz.:—Bars at 42d. per ounce and Mexican dollars at 41½d. per ounce.

Trade Notes.

Increased business has rendered it necessary for Mr. W. H. Brown, Watchmaker and Material Dealer, 15, Great Hampton Street, Birmingham, to largely extend his premises. Fresh plant and accommodation for 16 men are the extent of his present alterations, but further enlargements are contemplated.

Jewellers in search of novel patterns of chains, bracelets, necklets, and those other articles of adornment which go to make up the gem outrig of prospective purchasers, should write for the new trade catalogue of Messrs. John Goode & Sons, Regent Place, Birmingham, wherein they will find many new and attractive designs which are worthy of attention.

Messrs. Nicole Frères, of 21, Ely Place, E.C., report a lively and increasing demand for their musical boxes with interchangeable barrels, and as they have spared no pains or expense to improve these instruments in the direction of simplicity and strength, we are pleased to note that the latest model they are producing seems eminently satisfactory in these respects.

Mr. Alfred Hickman, whose recent dissolution of partnership with his brother we noted at the time, having removed to 83, St. John Street Road, reports that notwithstanding the slack period of the year, he has every reason to be satisfied with the way in which things are moving, and that he expects with a revival of business activity to do good business in his new quarters.

Messrs. R. & W. Sorley, jewellers, Buchanan Street, Glasgow, have been commissioned to execute the gold key to be presented to Her Majesty the Queen at the Municipal Buildings on the occasion of her approaching visit to Glasgow. Messrs. Sorley have also been entrusted with the preparation of the gold casket to be presented to Her Majesty by the ancient and royal burgh of Renfrew in connection with the visit to Blythswood.

Whatever be the ultimate results of the Merchandise Marks Act on the general trade of the country, efforts to comply with its requirements have given a distinct stimulus in certain branches that were in a somewhat languid condition. Mr. A. Jaccard reports an increasing demand for his English mainspring, where formerly springs of Swiss make were used, and expects shortly to supply none but the former goods. Certainly, if quality and finish is to be the test, there is no reason why the English-made springs should not hold their own.

In this connexion, the taunt that English watchmakers would be unable to construct complicated watches is shown to be equally undeserved, and an inspection of some of the goods manufactured here since the Act came into force would quite refute it. We lately had the pleasure of seeing some of the chronographs and repeaters made by Mr. H. Golay, of 46, Myddelton Square, and for general excellence of workmanship and construction, can bear witness that they compare favourably with anything of the kind that can be produced abroad. In addition to the ordinary run of complicated watches, he is manufacturing repeaters &c., with non-magnetic parts.

The Waterbury Watch Sales Company have removed from Holborn Viaduct to No. 7, Snow Hill, E.C. The premises now occupied by the Company, though not of so shoppy and ornamental a character as the former address, are infinitely better adapted for doing the extensive wholesale trade which the company anticipate. They consist of four floors, which extend back as far as Cock Lane, which they overlook, and the removal is a further evidence of the resolve of the Company to continue in the lines they have now definitely adopted, viz., of doing business with none but retail watch dealers; they have refused numerous large orders outside the trade, and the growing support they are receiving from the trade is so far considered satisfactory. Over a thousand watch dealers have, we are informed, signed the agreement required since May 1.

A deed of composition has been made by Leon Sichel, of Chaux-de-Fonds, Switzerland, and Max Steyerman, of 56, Portsdown Road, Maida Vale, London, trading as Leon Sichel & Co., watch manufacturers, at 33, Holborn Viaduct, London, and at Birmingham, &c., whereby they agree to pay 10s. in the pound by six equal instalments, extending over a period of eighteen months, the last instalment to be secured by surety. The total amount of liabilities scheduled in the deed is £97,047, of which £56,926 is unsecured. The total amount of composition payable is £28,463. This deed has been duly registered under the Deeds of Arrangement Act, which came into force on January 1 of the present year.

Among the exhibits at the National Co-operative Festival and Exhibition at the Crystal Palace, were a set of drawings of watch work, executed by Mr. Jabez Jackson, of Coventry, during the last term of the Horological Classes at the Technical Institute, Earl Street, under the tuition of Mr. J. W. Player, teacher. Mr. Jackson also exhibited a Vernier gauge, made at the same institution under the tuition of Mr. Bonnikson, and various escapements, including several made on the interchangeable system. For his exhibit generally, Mr. Jackson has been awarded third prize, the first two prizes going to members of the London trade. The judge was Mr. Daniel Buckney, who was appointed by the Society of Arts.

The Women's Jubilee Present to the Queen.—By permission of her Majesty, the necklace and earrings of pearls and diamonds presented to her by the women of Great Britain and Ireland in memory of the Jubilee, were exhibited last month by Messrs. Carrington & Co., 130, Regent Street, to whom the execution of them was entrusted. The necklace is composed of diamond trefoils, with a pearl in the centre of each, the large middle pearl being set in a quatrefoil of diamonds to form a pendant or brooch. The snap is in the form of a royal crown, and can be attached to the centre pendant or worn separately as a brooch, and the whole can be taken to pieces and converted into separate ornaments to be worn in the hair or separately as brooches. On the outside of the red morocco case, which is embellished with gold tooling and lined with light blue velvet, is a gold plate bearing the following inscription:—"To Victoria, Queen Empress, a token of love and loyalty from the daughters of her Empire, in remembrance of her Jubilee, June 21st, 1887"; and on the gold key is the monogram of "V.R.I." Much skill and taste are displayed in the workmanship.

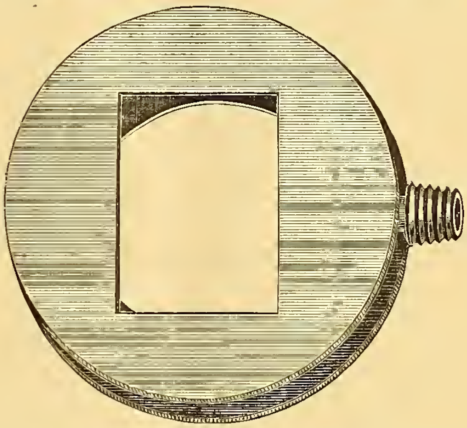
The Casket containing the address which was presented by the Executive of the Glasgow International Exhibition to Her Majesty the Queen, on the 22nd ult., was designed and manufactured by Messrs. George Edward and Sons, goldsmiths and silversmiths, London and Glasgow. The Casket, which is of silver, overlaid with pure gold, is quite different in shape from any casket hitherto presented to Her Majesty in this country, the design having been suggested by one of the Indian caskets among Her Majesty's Jubilee presents, now on view in the Kelvingrove Museum. It is cylindrical in form, richly chased with runic ornamentations and studded with Scotch stones from the various counties in Scotland. The Royal Arms are chased at one end, the Glasgow Arms at other end, and in the centre is a lion supporting a shield with the Royal Monogram "V.R." in relief, while the whole is surmounted with the Regalia. The casket rests on four upright supports, in Celtic form, standing on a military red velvet base, at the corners of which are four figures, representing four of the most illustrious Scottish regiments. The whole is contained in a handsome oak case, lined with satin. Messrs. Edward and Sons are also making the Casket to contain address to be presented to Her Majesty, at Queen Margaret's College, on Friday next. The casket is oblong in shape and covered with royal blue velvet, having ornamental silver gilt corner pieces and the Queen Margaret College badge in centre with royal monogram V.R. and Q.M.C. in monogram below. The gold catches, with ribbon for attaching badges which are worn by Convenors of Committees, were made by Messrs. Edward also.

Presentation Tea Urn.—The tenantry on the Cumberland estates of Mr. Charles Hylton Jolliffe have subscribed for a testimonial to be presented to him on the occasion of his marriage, which took place on June 6 last. The testimonial takes the form of a solid silver tea urn, which stands nearly two feet high, and weighs over 130 ounces. It is of exquisite design, and is a fine specimen of the silversmith's art. The body of the urn is vase shaped, with a graceful neck. The pedestal on which the urn stands is a square, and is supported by four large ball feet. The engraving is of the most artistic description, and is a combination of the Greek and Egyptian periods. Running round the top of the body of the urn is a band of scrolls, while below and in the centre are ten panels or shields, filled up with Egyptian ornamentation. On the lower part of the neck of the urn is a band of Greek keywork, and there is similar ornamentation below the shields. The urn bears the following inscription :—" Presented to Charles Hylton Jolliffe, Esq., on the occasion of his marriage, by the tenantry on his Cumberland estates, and a few friends. 6th June, 1888." This fine piece of plate has been supplied from the establishment of Mr. Routledge, jeweller, English Street, Carlisle, and it will shortly be on view in his window.

Casket for Prince Albert Victor.—On July 27 H.R.H. Prince Albert Victor, who opened the new Naburn Lock, was presented with the freedom of the City of York. The gold casket containing the freedom of the city is exceedingly beautiful, displaying rare and skilled workmanship. Its production was entrusted to Mr. J. C. Arundel, of Coney Street, York. It is placed in a polished ebony stand of neat design, with an abacus in dark blue velvet. The casket is oblong in form, measuring 6¼ inches from end to end, and the height from the base of the stand to the summit of the box is 10 inches. The box has classic mouldings, and the lid is surmounted by the arms, 'crest, and garter of the Prince, in 18-carat gold, with the rose of York rising in graceful garlands on each side. On the two ends of the lid the white rose is given again in enamel, while the obverse and reverse slopes have the Prince's monogram, with *repoussé* panels, having emblems relating to the municipal and historic greatness of the ancient city. The front of the box itself is divided into three panels, the centre having—also in 18-carat gold—the arms of York in full enamel blazon in centre, the two side divisions bearing, respectively, enamel paintings—one, a view of the Minster; the other, a view of the Micklegate Bar. One end of the box has the arms of the see of York; the opposite one being adorned with the shield, helmet and motto of the Lord Mayor. The reverse part has, in the centre division, the inscription recording the event as follows :—" Presented to H.R.H. Prince Albert Victor of Wales, K.G., with the Freedom of the City of York, 27th July, 1888. J. Sykes Rymer, Lord Mayor." On each side of this are devices, in raised and enamel work, of the 9th (Queen's Royal) Lancers, and the 10th (King's Own) Hussars, with which his Royal Highness has been associated during his residence in York.

Last month one of the most unique specimens of the silversmith's art was presented to Mr. J. W. Roberts, of Headingley, on his opening the new ground of the Armley Cricket Club by bowling over the sward one of Peate's cricket balls, made for the occasion. To receive this ball, after having been thus used, a massive stand had been constructed, this forming the centre-piece of a trio of cricket and football ornaments. It consists of a hand and wrist, life size, the fingers and palm bent into the natural position for holding the ball; this is erect, just as might be imagined in the act of bowling. The hand is silver, and has been modelled from life, the muscles, veins, and even the very texture of the skin, being reproduced with marvellous fidelity and truth. A handsomely-turned, solid, old English oak stand supports it, and this is further decorated by richly-engraved mountings and a solid silver plate, with an inscription. A second plate had been prepared, which, after the ceremony, was affixed to the ball, and this is inscribed as follows :—" This was the first ball bowled by the president, Mr. J. W. Roberts, on the occasion of the opening of the new cricket ground, August 18th, 1888." The centre stand, which is 22 inches in height, is flanked by two side-pieces, one representing a cricketer, bat in hand, backed by the wicket, and the other a football player in the act of taking a running kick at the " leather." The figures are of silver, and are borne upon old oaken pedestals, in keeping with the more important piece. Silver plates and scrolls, decorated in the Japanese style, adorn the two smaller pedestals, and the whole display has a rich appearance. The smaller stands are some 14 inches high. The carrying out of the ideas of the committee and the manufacturing of the trophies were entrusted to Messrs. Fattorini & Sons, of Kirkgate, Bradford, who have succeeded in providing a most creditable result.

Adams's "New Photograph Aptus Finder."—This new " Finder " for the use of photographers (as shewn in the illustration) is made in a manner which entirely supersedes the old form both in compactness and utility, by Mr. E. J. Adams, manufacturing optician, of 34, St. Paul's Square, Birmingham. Among the advantages it possesses are these :—It does not require a focussing screen, nor is a cloth necessary; it will suit any Camera, and by a moveable disc is adapted for either Portraits or Views, which obviates the necessity of removing it from the Camera. It is the exact size of the illustration, and can be carried in the waistcoat pocket comfortably and when not in use leaves no projection, an advantage not possessed by any of the imitations that we are informed its success has given birth to. In use it is fixed on the front of the Camera, and the object or view is seen perfectly defined in reduced size on the back. It is specially recommended to those who work with shutters, as by its use photographers are given full control over the shutter and are subject to none of those errors of judgment which many have experienced with the old forms of finders. We understand there is a large sale of these " Aptus " finders, and firms dealing in photograph aparatus &c., should write to Mr. E. J. Adams for a sample, when we feel sure they would find out the usefulness of this little article and appreciate such a cheap productive photographer's requisite. The price of the "Aptus" finder is 3s. 6d. each to amateurs, special terms and prices being afforded to wholesale houses.



There are nearly 1,000 men employed in Brooklyn, New York, making watch cases, and they average from 18 dols. to 21 dols. per week.

The Society of Arts offer prizes to art workmen for the session of 1888-89, in pottery, stone carving, wrought iron work, and goldsmiths' and silversmiths' work. The prizes in the last class are presented by the Goldsmiths' Company, and are offered for a cup or sugar basin of beaten silver, chased or otherwise. First prize, £20; second prize, £5. A pendant brooch or locket of gold without gems. First prize, £20; second prize, £5. Nineteen prizes are offered, in the class of pottery, four in the class of stone carving for the capital of a column, and three for a wrought iron grille. All articles for competition must be sent in to the Society's house on or before Tuesday, April 23, 1889. The conditions under which these prizes are offered can be obtained on application to the Secretary.

The Glasgow Exhibition.

THIRD NOTICE.

FRENCH BRONZES, VENETIAN GLASS, HUNGARIAN CHINA AND DANISH POTTERY.

As supplementary to our former specially contributed notices of the Glasgow Exhibition, the following abstract from an article in the "Queen" will be read with interest:—

"Among the many courts filled with all manner of artistic and beautiful things of every description, none attract more attention than the French court, which occupies a prominent position on the south side of the main avenue, and immediately to the east of the dome. The arches that form the entrance to this court are gracefully draped in blue, and its contents (bronzes, art pottery and articles of *vertu* generally) are displayed to the greatest advantage, both as regards showing each individual piece of work, and also as to the general effect produced.

"The exhibits in this court have been sent from many well-known studios and art dealers in Paris, and some are of the highest degree of excellence. At the east end of the room, Mons. Basset shows a collection of bronzes, among which there is some really magnificent work. A prominent figure is that of the 'Cid,' by Picault, which is remarkable for the spirit and life infused into the work; a knightly bearing and haughty demeanour characterise this representation of the Spanish hero. A pair of figures by the same master are most remarkable for careful finish in every detail; they are entitled 'Peace' and 'Labour,' the first being a female figure of a reaper, sickle in hand, standing beside a sheaf of corn; the other is a brawny smith, girt with a leather apron, and resting on his great hammer, the weight of which his muscular arms would evidently make but a trifle. 'A Faun' and 'An Angler,' in green bronze, have been copied from figures found in Pompeii, and are good imitations of the antique. A striking group, entitled 'After the Battle,' is the work of the Comte de Ferrières, and has been exhibited by M. Susse; it represents a broken ammunition waggon, with one horse still attached, and the other, who has kicked itself free of the traces, standing near; the horses are capitally modelled, and their look of terror, as shown in dilated nostrils, and limbs that almost seem to quiver, indicates the work of an artist familiar with such scenes, and well able to put them into form.

"There is another bronze bearing the same title, the work of a Russian artist. In this group a mounted Cossack is wiping his sword on the mane of his horse, while he leads another with an empty saddle. The action of the Cossack and the riderless horse tell their own tale without need of explanation, and the spirit and life in the figures, as well as in a number of pieces of work by the same hand, testify to the existence of high artistic power in Russia. Among other good specimens of his work are 'The Cossack's Farewell,' and 'The Flight,' in the last of which the idea of intense fatigue in both horse and rider, but with still continued rapid motion, is splendidly carried out. Other Russian figures by the same hand are lifelike in form and finished in detail. Bronzes such as these, and many others equally good, are, of course, not only valuable but costly.

"Another sort is exhibited by Blot, which is worthy of notice from its novelty, and also from the very good and naturalistic work which can be produced in it. It is really imitation bronze, and is by no means of the same value, but the designs of some of the groups are excellent, and in some cases the surface is enamelled with colours, more or less of the natural shades of the textures represented. In a head of Othello, for instance, the face remains the dark colour of the bronze, while the hair and beard are deepened to black, and the drapery is painted in rich colouring. Notwithstanding the brightness of the tints on these bronzes, there is no sacrifice of artistic effect, and it gives a curious air of reality to some of the figures.

"Some of the Eastern and Egyptian groups are particularly good, as the warm colour of the bronze lends itself well to the dark skin tints, while the Oriental colouring of the dresses gives a picturesque and telling finish to the figures. A pair named 'Ruin Keepers,' a reminiscence of Egypt, are spirited in design, and each of a different type of southern race. One, of a purely Egyptian cast of countenance, lolls in the languid but not ungraceful manner of his countrymen; while the other is a negro, naked to the waist, with an old-fashioned gun in his hand. He, too, stands in a listless, easy attitude; but both figure and face are beautifully modelled. An Egyptian girl sleeping the sleep of utter exhaustion, her tired head finding no softer pillow than the statue of a sphinx, whose calm, inscrutable face makes an excellent foil to her own, so full of sorrow and fatigue, is a most touching figure, and people return to look at it again and again. Similar in realism of effect and in the same class of colouring is 'In the Market at Tunis'—a figure of a woman in native dress, seated under a rough awning supported by posts. 'The Jugglers' are equally worthy of notice.

"The centre portion of the south side of the French court is occupied with art furniture. It is, of course, all modern: but some of the best pieces are exact reproductions of *chefs d'œuvres* of Riesener and other makers of note in the eighteenth century. Among these is a bureau in mahogany, with brass mounts, the original of which belonged to Louis XVI.: also a cabinet in much the same style, a copy of one which was once the property of Marie Antoinette. Some vases in porphyry, and a pair of marble pillars supporting candelabra, are also copies of work of that date, and are much to be commended both on account of the fidelity of the imitation and the execution.

"Before leaving the French court we note with admiration the china that has been sent by M. Deck, the well-known art-potter. There is no doubt that he has a speciality for rich and brilliant colouring which few, if any other, potters of the present day can attain to. The rich tones and fine glaze on some of his large plaques and vases are really wonderful. Perhaps nothing in their way are finer than two comparatively small plaques bound in red velvet, which are sent by him. On one of these, fourteen, and on the other, three, dancing Cupids are represented. Each figure is a perfect gem, and the variety of form, attitude, and expression of the little winged Cupids is quite remarkable. Rarely has such painting on china been seen, and one is not surprised that one of these plaques should cost £50 and the other £20.

"Nearly opposite the French court, in the centre of the main avenue, is the stall, bright with every delicate shade that Venetian glass is capable of receiving, where Salviati displays his fragile but lovely designs. A few years ago one might have imagined that Venetian glass had arrived at perfection, and that nothing of the nature of glass could be more fairy-like or more daintily tinted. There is no doubt, however, that now the designs are still more elaborate and lace-like in their fineness, and the dim hues more wonderfully blended. Crystal, opal, the faintest violet, the dimmest blue-green, some flecked with gold, some intersected with lines of contrasting colour, fine as a pen stroke: all these fade into each other, and form exquisite combinations of colouring. There are vases supported by dolphins and serpents, the principal tints being purple splashed with gold, and other vases of crystal and opal, the latter being at the base and supposed to represent waves. A large centrepiece for a dinner table has two tiers, and is supported by dolphins, the whole being in opal and gold, with a white pattern, like fine lace, in the glass. An amber flower vase is in the shape of a broken egg, from which emerges a dragon. Another of more quaint design is a large horn, held by a lobster, the whole enwreathed by a green serpent. A wine flagon in pale pink has a pattern in raised fleur-de-lys of white shot with gold, and looks as if it should at least be filled with nectar. A slanting jug is supported by an opal and gold dolphin, and has a green serpent for handle, while an oil and vinegar flask is in the palest shade of green, flecked with gold. Everything seems a dream of pretty colouring and design, and one admires, but avoids touching, one quaint and pretty conceit after another.

"After the bronze and faïence of the French court, and the Venetian glass that fills Salviati's stall, the contents of the Ceylon court offer a marked contrast.

"There is a large case of jewels, more noticeable for their size than their value, though the cat's eyes and moonstones for which Ceylon is famed are very good. The diamonds are large, but with no great brilliancy, and some Ceylon crystals cut in London looked almost as well. There were also rubies, amethysts, a very fine rose topaz, and yellow as well as blue sapphires; an uncut blue sapphire was as large as a large pebble, but seemed rather too light in colour; there was also a large pink ruby, but the shade was not deep enough, and consequently it was of little value. Some curious bracelets were made from the hair out of an elephant's tail, set in fine gold and pearls, but were more quaint than pretty.

"The display of Viennese and Hungarian china, sent from Wahliss's celebrated china manufactory at Vienna, is very good, and anything more beautiful than some of the pieces exhibited can hardly be imagined. The china itself is of wonderful quality and fineness, and some of the vases, plaques, &c., exhibited here have been decorated by the best painters of the day. Some specimens are shown of a dinner service that has just been finished for King Milan of Servia, and which has cost £3,000; it has been made for 50 people, and each plate is valued at £3. The colour is 'bleu du roi,' with raised gold ornaments, and extremely fine tracery in gold on the blue. A dessert set made for Lord Esher has the same border in royal blue and gold, but has a medallion, with a different female head on each plate, every one of which cost £4. Another set bought by Baron Rothschild has much the same border, with a likeness of a 'Vienna beauty' in the centre; these heads are exquisitely done, and said to be good likenesses. A vase, valued at £160, was specially painted for the exhibition by Wagner, one of the best artists on china of the day. The subject is 'The Judgment of Paris,' and the decorations of the whole vase are in blue and gold. There is a fine picture of the 'Christian Martyr,' the frame being also in china. The Hungarian china is all hand-painted (a great deal of it is the work of ladies), and noticeable for the quality of the china as well as for its ornamentation in gold. There is a good deal of open work on this china, also done by hand, and the designs are in general very good.

"The stall on which the Ipsen terra-cotta is exhibited is a very popular one. This terra-cotta and fine art pottery comes from Copenhagen, though its depôt in Bond Street must have attracted the attention of most of our readers. Everything, however, is Danish, and under the patronage of the King of Denmark. All styles are to be found here, and everything has the indescribable *cachet* peculiar to the work of the real artist, for we need hardly say that all are moulded by hand. There are figures 2 ft. or 3 ft. high by Fjelde, one of them a boy with a cat and her kittens, the other a little peasant girl; they are both quite charming, and as true to nature as it is possible to be. There are rustic groups of all sizes, some of the smaller ones placed inside velvet brackets shaped like niches, which have the effect of throwing them up well. There are also many copies from the antique, and from Thorwaldsen and Jerichan; an overmantel is made entirely of terra-cotta, with classical reliefs. Some vases after Grecian and Egyptian models are painted by hand in appropriate designs; these are fired, and are therefore permanent."

The Queensland Jewellery Robbery.

ACCORDING to recent advices from Melbourne, the entire proceeds, or nearly so, of a jewellery robbery committed at Maryborough, Queensland, on May 10 last, were recovered by the Melbourne detective police on June 25 last. The goods were stolen from the premises of Mr. A. Ebnetter, a jeweller carrying on business at Maryborough, and the whole property was valued at £1,500. Lists of the goods were forwarded to all the colonies, and distributed amongst the various licensed pawnbrokers. It was by these means that the first clue was obtained, which has led not only to the detection of the offenders, but to the recovery in a very remarkable manner of the missing jewellery. On Saturday, June 16, Mr. Mackay, a jeweller at South Melbourne, informed the head of detective police here that he had purchased from a working jeweller named Chas. Jacobs Derbert, four gold watches for £20, and that on comparing the numbers with those on the stolen property lists he discovered that the articles formed part of the proceeds of the Maryborough robbery. Detectives Nixon, Cawsey and Wordley were entrusted with the investigation of the affair, and on the following day arrested Derbert and a German named Alf Harman, from whom Derbert said he had obtained the goods. In the meantime another of the stolen watches turned up at Richmond, having been pawned there by a woman who gave her name as Rose Porter. This person was also arrested, and subsequently the officers arrested her husband, Robert Porter, who was believed to be the principal in the affair. These arrests resulted in the recovery altogether of six gold watches and six silver watches, all bearing numbers corresponding with those upon Mr. Ebnetter's list. Porter before his arrest had been watched whilst he went to the Richmond paddock, where, it appears, he had planted the booty in a furze bush near the cricket ground. The detectives followed him, but when he opened the cache it was found to be empty. It was evident that the robber had been robbed. The detectives discovered that a person who had been confided in by Porter had collared the booty and had concealed it in the Lizzy Lilly Dale ranges, about 25 miles from town. They proceeded there, and after wandering up and down the range for nearly two hours their attention was attracted by a small mound of fern leaves which had all the appearance of having been recently erected. Scraping this away, they found a black leather bag, which, on being opened, was found to contain 26 gold watches, 112 silver watches and a large quantity of minor articles, including earrings, scarfpins, bracelets, bangles, pencil-cases, studs, &c., in all worth between £900 and £1,000 and weighing about 50 lb. All the articles were mixed together, but were in a good state of preservation, and had not suffered to any great extent by the usage to which they had been subjected. The spot where the bag was found was in a paddock in a very unfrequented place, about 300 or 400 yards from the State school. The detectives returned to town with the recovered property. Though this does not complete the list of the articles returned as stolen, the detectives don't anticipate being able to recover any more, as the fact that amongst the collection there are several works without casings, shows that melting down has been done.

The Queen's Badge of the Glasgow International Exhibition.—The Executive Council selected the design submitted by Mr. Macgregor, art jeweller and engraver, of Perth. The badge is now completed, and was on view last month. Both in design and execution it is a most artistic production. The outline is a pointed oval, the margin is a belt of gold looped up at the base, and upon it is raised the inscription in mediæval characters, "Glasgow International Exhibition, 1888." Concentric with the outer belt is the principal part of the design —a massive gold oval, with fourteen carved fleur-de-lis alternating with fourteen Scottish pearls, radiating out and resting on the belt. On the margin of this oval is a raised band, with the motto, "Palmam qui meruit ferat." The band is enriched with diamonds at the points. On the field in the centre is a figure of Fame, bearing a winged and snaked staff, and holding out a wreath of laurel, all carved in relief from the solid gold. The field shows a mosaic-like trellis of diamond-shaped panels, with the Glasgow arms repeated about seventeen times, cut on a space of about an inch surface, with minute diamonds set in the crossings, giving the field a starry-like effect. Immediately above the central oval is an imperial crown, standing upon which, and forming the apex of the design, is a miniature Scottish lion rampant, carved free in gold. Within the loop at the base of the design is a Royal helmet and gorget, with heraldic mantling, exquisitely carved from the solid gold. The following is the inscription on the back of the badge:—"Glasgow International Exhibition, State visit of Her Majesty Queen Victoria, 22nd August, 1888."

Birmingham News.

FROM OUR CORRESPONDENT.

AUGUST has not proved to be as good as was promised by some of the more sanguine of our friends, and manufacturers are complaining of a great falling-off in the matter of orders, and sundry rumours of coming failures are tending to cause a considerable amount of stagnation, though the general opinion is that there will be a better winter trade than last year.

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ONE or two firms are fairly employed in fancy buckles for waistbands, in metal gilt or silver-plated, but real silver do not sell, and the few sales that were made last season in silver goods of this class are mostly being taken back again by the maker.

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A FEW makers are getting out new designs for the double or twin brooch, which is said to be the coming thing, and I really think there is a chance for it, as it looks very pretty and admits of a great variety of treatment in design; and appears particularly appropriate in wear, suggesting as it does the holding together of the dress collar. I strongly recommend makers to follow up this idea.

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THERE is a considerable amount of talk about coral jewellery in various styles being fashionable for the dancing and concert season; if so, now is the time for manufacturers to renew their stocks. It is already all the go in Paris.

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THE American system of street tablets is being tried here: one has been erected at the corner of Northampton Street, containing the names and number of premises of all the residents in that street. The tablet is painted on sheet iron in black and white in a neat oak frame, glazed, and is rather too small, I think, to be satisfactory; in a larger size they would be very useful, as one could see at a glance if the person or firm required were in that particular street, and save the trouble of hunting. They will be placed at both ends of a street.

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THE firm of Messrs. "Tye and Jenner," Tenby Street, Birmingham, is now "A. W. Jenner & Co.," Mr. Tye having separated from them.

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MR. PETER BARNETT, pencil case maker, has removed from Vyse Street to Key Hill Drive.

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MR. CHARLES HASELER, who is doubtless known to many of your readers as the practical manager of the English Watch Company, Limited, Villa Street, having resigned that post, was the recipient of a beautifully-illuminated address and testimonial signed by the whole of the employes, managers, &c., numbering 200, and conveying the very highest expressions of respect for the seventeen years of excellent service rendered, and many good wishes for the future. The whole is bound in book form, and makes an elegant work of art, forming a most perfect means of conveying to Mr. Haseler the very high esteem in which he is held. Mr. Haseler has now started in business, in company with his eldest son, at 94, Bridge Street, West.

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I WAS surprised, upon a recent visit to their works, to find them already well fitted up with nice machinery and a four-and-a half horse-power gas engine. Their line of business will be small mechanical specialities, including watches. Mr. Haseler is known as the designer of some of the strongest keyless work made, and with the aid of his son, who, I understand, is a mechanician of considerable ability, will be in a position to produce a variety of mechanical novelties worthy of the attention of large buyers for all markets. The firm possess, I understand, one of the finest wheel cutting machines in Birmingham.

Art Education for Jewellers.

BIRMINGHAM JEWELLERS' AND SILVERSMITHS' ASSOCIATION.

UNDER date 13th August, the above Association has issued the following circular, over the signatures of Charles Green, Chairman; J. M. Banks, and J. William Tonks, Hon. Sec. of the Art Classes Sub-Committee. The Officers of the Association have much pleasure in informing you that they have completed their arrangements with the Committee of the Municipal School of Art, for the immediate opening of Art Classes for youths between the ages of twelve and twenty years. The following scheme has been accepted as an experiment for two years:—

1.—A special room to be set apart for the Jewellers' Association Class, in the Board Schools, Ellen Street, Birmingham, the Students to be taught by a separate Master or Masters, on definite lines, preparatory to the study and practice of artistic design, suited to the Trades in which the Students are engaged.

2.—Every Student to be entered by and through the Jewellers' Association, and to have the option of attending the Classes five nights per week during the Autumn and Winter terms, but to undertake to attend at least three nights per week as a condition of being allowed to study.

3.—The education of the Association Students to be free, except so far as the cost of drawing materials, which they will themselves provide. To secure this boon the Committee propose that the Association shall subscribe one-half the cost of the education of the students, the employer in each case providing the remaining half. The School of Art Committee have met this case by placing the entire fee at 3s. the Autumn and 2s. 6d. the Winter Term for each Association Student. These fees must be paid in advance.

It is very desirable that this important movement should be set on foot at once. The plan is to commence in September, on condition that 40 students are prepared to take advantage of it. We trust to be assured of your hearty and active co-operation in the effort. Be good enough, therefore, to let us have, before 25th August, the names and addresses of such pupils as are willing to fulfil the required conditions, together with the half-fees for the coming Autumn Term. We believe that if an earnest endeavour is made to take advantage of the opportunity thus afforded, a great impetus will be given to the character and position of the Trade in its artistic developments, as well as a new interest awakened in their occupations on the part of Jewellers themselves.

Appended to the circular is a form of entry. The Offices of the Association are at 55, Vittoria Street, Birmingham, and Mr. J. W. Tonks is the Hon. Sec.

The Largest Chronograph.

A UNIQUE chronograph has just been completed by the Waltham Watch Company. As described by the *Jewelers' Weekly*, in size it is a veritable monster, the dial being 30 inches in diameter and the movement 14 × 8 inches. Owing to the numerous difficulties constantly arising in the making of this brobdingnagian timer, and which necessitated careful and painstaking calculations and experiments, nearly eight months have been consumed in its manufacture. Now that it is complete, however, duplicates will be comparatively easy.

The chronograph was made by special order of the Racing Association of Sydney, Australia, and will occupy a prominent position above the judges' stand, so that in addition to being the official timer, its dial can also be plainly read by the spectators.

The hands, of which there are two, register the minutes, seconds and fifths of a second, and are started by a substantial lever, which takes the place of the tiny knob in the chronograph watch.

Pull number one starts the hands, one telling the time in fifths of a second, and the other travelling more sedately to keep tally of the minutes. Pull number two stops both instantly, and pull three sets both hands spinning back to the starting point. To make the minute hand do this on a monster chronograph where the lever was both solid and heavy was quite a different thing from the lever fall in a chronograph watch, where that part is but a feather weight. By an ingenious combination of wheels, springs and catches, termed a moderator crane, however, the lever of the big chronograph comes down upon the cam as softly as though it were but a few grains in weight.

A 90-pound weight having a drop of 3 feet furnishes the motive power, which is constant, even when the chronograph is being wound up. The hair-spring is cylindrical and similar to that in a marine chronometer. Throughout the movement the ordinary flat spring is replaced by a spiral.

When in position the chronograph will be operated by electricity, and a push button to complete a circuit will be the only thing necessary on the judges' stand in order to permit the spectators to see for themselves the time of a race. As has already been said, it will, of course, be the official timekeeper on the track, and as the Australians are known to have a perfect mania for horse racing it will doubtless be kept in pretty constant use. That the order was given to an American firm is a compliment both to their country and to its manufacturers.

Engraved Gems.

THE Trustees of the British Museum have just issued a small octavo catalogue of the engraved gems in that institution. The work has been compiled by Mr. A. H. Smith, in the Department of Greek and Roman antiquities, forming altogether a detailed account of over two thousand pieces. The bulk of the collection, formerly the property of the Duc de Blacas, and of Signor Alessandro Castellani, is now exhibited in the so-called Gem Room, adjoining the Department of Coins and Medals. The Duke purchased the whole of the Strozzi collection from Rome. His taste as a collector appears to have run chiefly upon gems, though he possessed a very important series of Greek and Etruscan vases, besides early personal ornaments of gold. We are told that the habit of collecting engraved gems for the sake of their beauty is known to have been occasionally indulged in by private individuals in ancient Greece, but that no public collection of them appears to have been formed in that country with the view of educating the general taste. But, indeed, we know nothing of the first beginnings of the art of engraving upon precious stones. It appears, however, to have come from the East. Pliny mentions an edict of Alexander the Great, forbidding the engraving of his portrait by any other artist except Pyrgoteles. We seem, therefore, justified in supposing that in the age of Alexander the art of engraving on gems was extensively practised in Greece. Among the Romans in the last century B.C. gem collecting became a passion, the impulse towards it having been given by the Cabinet of Mithridates which Pompey carried off to Rome, and placed among the treasures in the Capitol. With the Renaissance the passion for collecting ancient gems revived, and has remained in force ever since. The stones necessary for the cameos are sard, onyx, agate, jasper, and ruby. The finest specimen in the collection is a head of Augustus, a sardonyx five inches-and-a-quarter in length, by three-inches-and-three-quarters in breadth. The ground, or layer of the stone out of which the head rises, is of a fine russet colour. A head of Medusa forms the centre of the shield which covers the breast. The Emperor has a band or fillet round his head, on which are various precious stones. This gem, a beautiful photograph of which forms the frontispiece to the work, is considered almost unique.

American Items.

COMMENTING on the situation in the diamond trade, the *Jewelers' Weekly* says the spirit of trusts and corners which characterises the last quarter of the nineteenth century has spread even to the wilds of South Africa, and a combination of the principal diamond mines is one of the results. That this new condition has created some anxiety in the markets of the world is not surprising, but whether there is ground for fears remains to be seen. Our correspondent, an acknowledged authority, after carefully surveying the field from vantage ground, formulates a deliberate opinion that the consolidation, so far from injuring the trade in rough diamonds, will benefit it by assuring a stable market: that cut goods will maintain their prices for many years to come, and that the demand for diamonds will keep pace with the supply. Though this may read like a too roseate view of the situation, the reasons he gives for maintaining it are logical and in accordance with the facts. We certainly should not quarrel with it, for it unfolds a prospect at delightful variance with the gloomy forebodings of the all too numerous prophets of ill omen.

APROPOS of technical education, a subject upon which the American trades are just now so much exercised, the same journal remarks that despite the gigantic strides made by American arts and sciences during recent years, we have still much to learn from the methods of our older brothers on the other side of the water. This is noticeably the case in the matter of technical education, which has been brought to a high state of perfection in European schools; but which in this country has in the main been sadly neglected. It has repeatedly called attention to this defect, in advocating the establishment of well-equipped schools for instruction in watchmaking under the auspices of the trade. The interesting exercises of the French Horological School, as described by its Paris correspondent, again bring the subject prominently before the trade. That there is need of a similar institution here is proven not only by the fact that our jewellers prefer foreign watchmakers because of their thoroughness, but also by the letters of inquiry which young men who wish to learn the trade are sending to us from all parts of the country. They refer them to the few watchmakers who, without the support or encouragement of the craft, are trying in a modest way to supply the required instruction. It is to be hoped that one of them at least will succeed in eventually interesting in his enterprise those who would benefit most from it. A proper nucleus once formed would soon grow, in the spirit of American enterprise, to proportions worthy of an industry which stands a good first among its competitors.

THE letters of the various fashion correspondents to the daily papers from the numerous summer resorts, describe at length the richness of the toilets worn by the ladies, and dwell upon the fact that they are wearing an unusual quantity of jewellery this season. Precious stones are the chief articles of personal adornment with those who can afford them, but gold jewellery, filigree silver articles, &c., are greatly worn. One lady correspondent goes into ecstacies over costumes that are decorated with apparently loose gems, diamonds, rubies, pearls, &c., mounted on fine gold wire, almost invisible, scattered over the dresses of the ladies promiscuously, which gives them an appearance of having been caught in a shower of dew drops. Decorations for the hair are also very pronounced, and take on an infinity of form and style. At many of the fashionable weddings that have recently occurred in this vicinity jewellery has been conspicuously worn by all the parties on exhibition, from the bride and groom down through the ranks of best men and bridesmaids, to the spectators of either sex. Decidedly fashion is a fickle jade, and the ornaments that were despised by her a few years ago are now demanded in profusion. Jewellers should, in the opinion of our contemporary, make hay while the sun shines, for the next turn of fashion's wheel may leave them at the bottom again.

Modern inventions in the jewellery trade, says the *Jewelers' Circular*, have wonderfully simplified many things connected with the toilets of ladies and gentlemen. Who cannot remember when shirt buttons were the bane of the life of men and a constant nightmare to housewives, who were held responsible that shirt buttons should always be maintained in their appropriate places with the utmost integrity? Now neither shirts, men nor housewives are the slaves of the treacherous buttons, that had a habit of disappearing at the most critical moment. Now, gentlemen use gold buttons wherever the pearl affairs used to dominate, while for cuffs and collars gold buttons are made with various mechanical devices which secure the introduction of them into the refractory linen without injury to finger nails or compelling the use of bad language. These mechanical buttons have become so much of a necessity that the trade is flooded with different inventions of this nature, and that manufacturer who has not one or two patents on buttons is behind the times. Ladies also enjoy the blessings of mechanical buttons, and fasten their collars and cuffs with the same degree of facility and felicity that gentlemen do theirs. Great is the inventive genius of the ubiquitous Yankee, and in small things lie his profits.

The Wrecks of Watch Factories in America.

Under the above heading, the *Waterbury* publishes the first part of a communication, of which the following is an abstract, from a correspondent, who states that he has therein endeavoured to give a very brief review of the many wrecks which strew the channel borders of the great stream of manufacturing enterprise, and which were stranded upon the delusive rocks of "Watchmaking by Machinery."

Almost 80 years have elapsed since the first so-called watch factory of which there is authentic record was started in the town of Shrewsbury, Mass. (in 1809), by one Luther Goddard. His venture was limited to a one-story building, about eighteen feet square. To our later experience this would seem but a play house, though we are told that he employed very good workmen, men who had been soldiers in the British army and who preferred after the war was over to remain in America.

Goddard not only depended upon the mother country for his cases, but imported the parts and confined his labours to finishing and assembling the movements. Six years of varying fortune brought a disastrous culmination, and in 1815 he succumbed to the inevitable, after having produced about 500 watches. Five hundred and thirty is the figure given by some authorities. From watch making Mr. Goddard turned his attention to ministerial matters, and he was last heard of as an itinerant preacher.

Watch factories were for some decades almost forgotten, until in 1837 Henry Pitkin essayed to produce a watch by machinery, Hartford, Conn., being the locality selected. We are told that at first he discarded jewels and then re-adopted them; also that he introduced the "going barrel" as a substitute for the English fusee. On the one hand he was industrious, inventive, fertile in expedients, and a thoroughly trained and capable workman, but lavish in expenditures, sparing nothing whenever he saw or thought he saw a new pathway to success. He fought against odds. English and Swiss competition drove him to the wall. Chagrin and disappointment were followed by insanity, and his career closed as that of a suicide, seeking death by drowning in the East River in the month of April, 1845.

Before Pitkin's terrible culmination, five years previously, in 1840, Jacob D. Custer, of Norristown, Pa., became charmed with the illusive prospects of watch making, but after turning out about a dozen of finished watches he gave up the attempt, and, like Goddard, became an itinerant preacher, in which calling he continued until gathered to his fathers in 1879.

Meanwhile a very bright and unusually smart watch maker and designer, Aaron L. Dennison, of Freeport, Me., had been figuring upon a startling innovation. He was thoroughly conversant with all the requirements of the watch trade, and the watch world was on tiptoe of expectancy for an astonishing revelation in some new and wonderful inventive production.

Joining Howard & Davis, Mr. Dennison started watch making in a small room of the clock factory of Howard & Davis, in Roxbury, Mass., in 1849.

The business was conducted at first under the name of the American Horologe Company — afterwards changed to the Warren Manufacturing Company, and, still later, when removed in 1854 to Waltham, Mass., to the Boston Watch Company. They manufactured a watch similar in many respects to the English, and intended to run eight days. The factory was lavishly supplied with mahogany counters, benches and tables, elegant pictures, &c. These æsthetic surroundings did not produce success, and in 1857 the Company made an assignment.

Dennison is quoted as saying: "I do not think there were seven times in the seven years we were together that we had enough money to pay all our employes at the time their wages were due."

Howard was also represented as stating: "Could I have seen beforehand the trials and tribulations, I would never have started. Millions would not tempt me to go over the same ground again."

The Boston Watch Company plant was purchased at auction by Robbins & Appleton.

In 1859 some very big men, great in finance and push, such as Virgil C. Gilman, Thomas W. Lovell and Leonard W. Noyes, started the Nashua Watch Company, with 100,000 dols. capital. They erected a very nice building in Nashua, N. H., which contained all the modern improvements, running water, decorated ceiling and picturesque architecture. In three years they had run behind 53,000 dols., and in 1862 were absorbed by the Waltham Watch Company, and the plant was removed to Waltham, Mass.

After the failure in Waltham of the Boston Watch Company, Mr. Howard returned in 1857 to Roxbury, and with a "baker's dozen of workmen," from Waltham, started the old factory under the firm name of E. Howard & Co. In 1861 they organised as the Howard Clock and Watch Company, with a capital of 120,000 dols.

After six years of hard work, the amount of sales not covering expenses, the directors decided in 1863 to close the factory, and instructed the treasurer to dispose of the assets of the company to the best advantage. Let me remark here, by way of parenthesis, that the above concern must not in any way be confounded with the E. Howard Watch and Clock Company of to-day.

Now the era of unsuccessful trials began. Fresh efforts and consequent failures followed each other quick and fast. In April, 1863, N. B. Sherwood, a thorough mechanic and most careful experimenter, with Arthur Wadsworth, an English watchmaker of established reputation, and Fellows & Schell, a reputedly wealthy firm, organised the Newark Watch Company. They purchased the requisite real estate, erected a building and pushed the work energetically; yet four years elapsed and 1867 arrived before the first watch was completed. However, they had trouble by encroaching upon other patents, and managed to accumulate a mass of dead stock. This and other drawbacks caused their profit and loss account to show 200,000 dols. on the wrong side in 1869. Here history repeated itself, and just as the Nashua Watch Company had been absorbed by the Waltham Watch Company, so now the Newark Company was (after an expenditure of 200,000 dols.) swallowed by the Cornell Watch Company, of Chicago.

In 1870, the last-named, the Cornell Watch Company, of Chicago, Ill., was organised with a capital of 200,000 dols., partly to "boom" real estate near Chicago, at what was known as "Grand Crossings."

After a checkered career of four years, Mr. Cornell got possession of the stock and transferred the whole establishment, in 1874, to San Francisco, Cal., organising there the Cornell Watch Company of California, with a capital of 150,000 dols.

The company managed to pay its employes until the close of 1875, when Mr. Ralston, the president, committed suicide. An examination of the affairs showed a large deficit. The Cornell Watch Company, of Chicago, Ill., and the Cornell Watch Company, of California, lived the time allotted to others—a period of six years—the latter suspending operations in 1876.

Soon after this an effort was made to revive the Cornell Watch Company, of California, under the name of the California Watch Company, with a nominal capital of 250,000 dols., but it failed miserably within the year of its birth, and the migratory plant which started at Newark, N. J., stopped awhile en route at Grand Crossing, Ill., then lodged for some years in San Francisco, Cal., and a little later on found a resting place in Fredonia, N. Y., having been purchased by the Independent Watch Company.

* * * * Let us return to the year 1863, when Frederick A. Giles, Fayette S. Giles, Wm. A. Wales and George C. T. Wright organised the United States Watch Company, of Marion, N. J. These gentlemen had been in the fine jewellery business, were experienced and commanded ample capital. The organisation was completed in 1864, and the capital of the company was 500,000 dols. Interested in it were Banker Hatch, Harper Bros., Mr. Randel, of Randel and Baremore, and several others equally high in business standing. A building was erected costing 125,000 dols., and in 1865 manufacturing was commenced in earnest.

(To be continued.)

Jewellery Repairs.

Repairing Broken Pin Stems.

FIRST remove the top half of the stem from the pin head by unscrewing it, or if it is soft-soldered in, as is sometimes the case, warm the tube by means of a small pointed blast from the blow-pipe, and holding the piece of broken stem in the pliers, twist it round while the solder is fused, when it will easily separate from the socket; now file the ends of each piece of stem where broken, at long angle, so that they will fit on to each other true, similar to the splicing of a mast or spar as adopted by sailors; then take a piece of flat charcoal or pumice stone, long enough to lay the whole of the stem upon, and with a three-square file make a small groove across it deep enough for the stem to lie in; place the two flanges, just made, together with a little borax as flux, and silver-solder the whole together; the twisted part can be re-made by means of a round-edged jointing file, and then polished and rouged with a lathe brush, when the stem will be as good as when new, but it will be a trifle shorter than before owing to the overlapping in splicing.

Repairing Rings.

To hard-solder the broken shank of a ring without removing the stones is possible with a little care and skill (with the exception of rings set with pearls, which must not be attempted). In order to do this, the head of the ring must be cased in some material that is a very slow conductor of heat—a common potato cut so as to admit the head of ring is very convenient, or make a plaster of paris block round the head of ring by pouring the fluid plaster into a small mould with the ring placed in it; you can then solder with easy-running solder, if careful, without injuring stones, etc. The ring should be well oiled on the parts where the plaster will touch, in order to prevent it sticking too fast and causing trouble in removing.

A Method for Bending Gold Tubing.

It often occurs that it is necessary to bend tube work into a circle or other curved form without the aid of copper wire, which has to be dissolved out with nitric acid and affects the surface of the alloy to the detriment of after work, such as soldering, &c. This can be obviated by filling the tubing while straight with sand, rammed down hard and the open end of tube afterwards plugged up and soldered in, when the bending can be done easily and the sand afterwards emptied out, which leaves the work clean and strong; this is particularly good for silver work, as the copper wire and acid system is often a great trouble, if not impracticable.

A. O.

Solders and Soldering.

THE importance of a thorough knowledge of soldering processes to the practical workman, and of the constituent parts of the various soldering alloys used by him, is scarcely to be over estimated. Every jeweller has from time to time come across bad work in this department which could only be accounted for by the ignorance of the person who executed it. We have on various previous occasions published short articles and recipes on the subject, and the following article, which we take from the *Jewelers' Circular*, will doubtless be read with interest as a more complete digest of the processes, &c., than has yet appeared :—

Solder is an alloy employed to unite, by the aid of heat, two metallic bodies that are placed in contact. A solder, then, must be more fusible than the metals it is intended to unite, otherwise they would be damaged by the degree of heat applied. Solder is all the less tenacious and melts the more easily according as the proportion of the most fusible metal present is increased. This fact is taken advantage of when several solderings have to be performed on the same object. The alloy last employed will require to be considerably more fusible than the first, as otherwise the heat would be so great that the earlier joints would melt. In an ordinary lead and tin solder the fusibility is increased by increasing the proportion of the latter metal, till the lead is to tin as 6 : 1. This alloy melts at 194° C. (380° F.), and the fusing point may be still further reduced by adding a gradually increasing proportion of bismuth.

As the melting point of the solder approximates to that of the metals to be united, the risk of damaging the latter is, of course, increased, but, at the same time, the joint will be all the stronger, as the metal will be almost as strong there as at any other point, and it can be forged, etc.

Solders are distinguished as *hard* or *soft*; the former requires the application of a red heat, and can therefore be used only for such metals as gold, silver, brass; whereas the latter melt at very low temperatures, and can be employed for metals that have low melting points, or where it is important not to exceed a moderate degree of heat. The joint is, however, the more solid according as the heat employed approximates to that at which the metal will melt.

Composition of Solders.—The solders ordinarily employed can be obtained at material stores, but it is advisable to give here the composition of some of the more important, specifying the metal to which they are applicable.

Aluminum Solders.—I. Zinc, 70 parts; copper, 15; aluminum, 15.

II. M. Mourey employs a series of aluminum-zinc alloys, commencing with 2 per cent. aluminum to 98 per cent. zinc, and progressing to 20 per cent. of the former to 80 per cent. of the latter metal.

Gold Solders.—I. Gold, 6 parts; copper, 1 part; silver, 2 parts.

II. Gold, 15 parts; silver, 2 parts; copper, 1 part.

III. Gold, 11.94 parts; silver, 54.74 parts; copper, 28.17 parts; zinc, 5.81 parts. The first three metals are melted together in a crucible, and when they have somewhat cooled, a somewhat greater proportion of zinc than is here indicated (to allow for loss by volatisation) is added and the alloy constantly stirred.

IV. Gold, 6 parts; silver, 1 part; copper, 2 parts.

Soft Gold Solder.—Gold, 4 parts; silver, 1 part; copper, 1 part.

V. Gold, 2 parts; silver, 1 part; copper, 1 part.

VI. Gold, 3 parts; silver, 3 parts; copper, 1 part; zinc, ½ part.

Gold Solder for 14 and 16-Carat Work.—Gold coin, 1 dwt.; pure silver, 9 grs.; pure copper, 6 grs.; brass, 3 grs.

Darker Colour.—Gold coin, 1 dwt.; pure copper, 8 grs.; pure silver, 5 grs.; brass, 2 grs.; melt together in a charcoal fire.

Jewellers' Alloys.—*Eighteen Carat Gold for Rings.*—Gold coin, 19½ grs.; pure copper, 3 grs.; pure silver, 1½ grs.

Cheap Gold, 12-Carat.—Gold coin, 25 parts; pure copper, $13\frac{1}{2}$ parts; pure silver, $7\frac{1}{2}$ parts.

Very Cheap, 4-Carat Gold.—Copper, 18 parts; gold, 4 parts; silver, 2 parts.

Imitations of Gold.—I. Platinum, 4 parts; pure copper, $2\frac{1}{2}$ parts; sheet zinc, 1 part; block tin, $1\frac{3}{4}$ parts; pure lead, $1\frac{1}{2}$ parts. If this should be found too hard or brittle for practical use, re-melting the composition with a little sal-ammoniac will generally render it as malleable as desired.

II. Platinum, 2 parts; silver, 1 part; copper, 3 parts.

These compositions, when properly prepared, so nearly resemble pure gold that it is very difficult to distinguish them therefrom. A little powdered charcoal, mixed with the metals while melting, will be found of service.

Best Oroide of Gold.—Pure copper, 4 parts; sheet zinc, $1\frac{3}{4}$ parts; magnesia, $\frac{5}{8}$ part; sal-ammoniac, $\frac{11}{32}$ part; quicklime, $\frac{9}{32}$ part; cream of tartar, $\frac{7}{8}$ part.

First melt the copper at as low a temperature as it will melt; then add the zinc, and afterward the other articles, in powder, in the order named. Use a charcoal fire to melt these metals.

Silver Solders.—I. Silver, 2 parts; brass (for pin wire), 1 part.

II. Silver, 5 parts; pin wire brass, 1 part.

III. Silver, 10 parts; pin wire brass, 5 parts; pure zinc, 1 part.

IV. (For the use of jewellers).—Fine silver, 19 parts; copper, 1 part; sheet brass, 10 parts.

V. *White Solder for Silver.*—Silver, 1 part; tin, 1 part.

VI. *Silver Solder for Plated Metal.*—Fine silver, 1 part; brass, 10 parts.

VII. Silver, 2 parts; brass, 1 part, with borax; or

VIII. Silver, 4 parts; brass, 3 parts; zinc, $\frac{1}{18}$ part, with borax.

Solder for Brass.—Copper, 3 parts; zinc, 1 part, with borax.

For Platinum.—Gold, with borax.

For Iron.—The best solder for iron is good tough brass, with a little borax.

For Copper.—Brass, 6 parts; zinc, 1 part; tin, 1 part; melt all together, mix well and pour out to cool.

Cold Solders.—I. Copper, 24.24 parts; silver, 27.57 parts; gold, 48.19 parts.

II. *Enamel Solder.*—Copper, 25 parts; silver, 7.07 parts; gold, 67.93 parts.

III. Copper, 26.25 parts; zinc, 6.25 parts; silver, 31.25 parts; gold, 36.25 parts.

IV. Silver, 19.57 parts; gold, 80.43 parts.

Tin Solders.—I. (Ordinary soft solder). Tin, 2 parts; lead, 1 part.

II. (Harder, and known as "plumbers' sealed" solder). Tin, 1 part; lead, 2 parts.

III. Many other proportions of tin and lead are occasionally used, ranging from tin, 1 part; lead, 25 parts; to tin, 6 parts, lead, 1 part.

IV. (Very fusible solder melting in boiling water). Lead, 3 parts; tin, 5 parts; bismuth, 8 parts; the fusibility is still further increased by adding mercury or cadmium.

Spelter Solders.—(Used for brazing). Copper and zinc in varying proportions. It becomes more fusible as the amount of zinc present is increased.

(To be continued.)

The Manufacture of Pebble Lenses.

WISHING to inform ourselves of some of the practical processes appertaining to the work of the optician, we recently visited the steam pebble works of Mr. W. A. Newbold, Jun., in Clerkenwell, and saw there in progress the transformation of figuratively shapeless lumps of rock crystal, or quartz, into "pebble lenses." The various stages the rough stones have to undergo before the crystal has acquired pure transparency and the physical power of focussing the light, were very interesting. The systematic subdivision of labour in these somewhat extensive works affords great assistance to the uninitiated to grasp what is done, and how it is done; and the personal explanations of Mr. Newbold, by whom we were very courteously received, enable us to give the following particulars of the manufacture. The machinery in use is driven by a very fine beam engine of 50-horse power, nominal, and a pair of enormous boilers, of which there is a reserve set, in case of accident: these are contained in a building apart from the factory proper. The first thing in the factory which attracts a visitor's notice is the store of pebble in the rough, as imported from the Brazils. The quartz comes to hand packed in untanned bullock hides, about 30 inches high and as many round. It appears that this mode of packing is a distinctive feature of the South American market—the quartz from other parts of the world being brought over in casks.

The rough stone is of great density, consequently very heavy, and being also very hard, is, for that reason, a non-conductor of heat. It presents the appearance of a molten substance of varied shape and size, but all have the characteristic grain, or regular sides, peculiar to crystallisation. The exterior is sandy or gritty, and the colour inclines from a faint pink to a deep amethyst. Occasionally, tinted stones are found. This particular crystal belongs to the uniaxal class; and as the optical axis of that class of crystal coincides with the axis of crystallisation, valuable pebble lenses have to be made from sections or slabs of the rough stone sliced off at right angles to the axis of crystallisation, regardless of the waste this naturally entails. We were told that where the price outweighs all other considerations, the rough stones are sliced into the greatest number of slabs the bulk will yield, without regard to the axis of crystallisation, a practice which is much to be deprecated.

Passing on to the processes: A whole row of vertical spindles, fitted with a thin prepared iron disc, which revolves at a great speed, are called the "slitting" machines. The slitting of crystal is tedious and slow, because of its great hardness; diamond dust and mineral oil are used as a medium. The slabs vary but little in thickness, but much more in shape and size, and in that condition present dull surfaces and are quite opaque. We leave the slitters and see the shankers: these pare or clip the slabs with glaziers' shanks into a round or oval shape. Next we are taken to a large copper, sufficiently heated to soften a very hard kind of cement it contains. Here the shanks or trimmed slabs are very nimbly pasted on one surface with a lump of the cement about the size of a couple of walnuts. This is the sticking. It is only now that the optician's work begins. For its execution are sets of tools to impart the different foci to the slabs. It requires one set of tools for each different focus, and two sets when the lenses are meniscus or periscopic; for these processes the number of tools used is very considerable. These optical pebble-grinding tools are in metal, circular in form, and range from 18 inches down to 2 inches in diameter. Their plane represents part of the surface of a sphere whose radius is accurately determined. One of these tools represents the surface of the sphere from the outside, and the other the surface of the same sphere from the inside. They are worked beautifully true, and a convex tool makes so perfect a contact with its concave twin as to create a powerful suction. A slab ground in a concave tool will itself wear into a convex, and *vice versâ*. Mr. Newbold showed two entire sets of tools, one being gauged by the system of focal inches, and the other in the metrical system of diopters (technically). Though the principles and notation of these systems widely differ, many foci of one system nearly match the foci of the other; but here, again, to the credit of the firm, two distinct series of tools are used.

The next process after the sticking is the roughing. For this purpose coarse tools that match the finishing tools are screwed on vertical spindles that rotate rapidly in a kind of open box, which contains coarse, powdered emery and water. To the roughers the pellet of cement serves to hold the slab, moving it from the centre to the edge of the tool, while emery and water are poured on the surface of this latter to feed the grinding.

The next process is the blocking and smoothing. This requires great strength and judgment. A sufficient number of slabs being roughed (*i.e.*, having the required convexity or concavity), are arranged symmetrically—with the cement of course uppermost—on the finishing tool, which is screwed firmly on a bench or pillar. A heated dummy tool or shell is now placed on the cement, which at first melts and adheres to the dummy tool. When allowed to cool, the slabs are found solidly and rigidly fixed on this shell in a manner that forms contact with the tool itself. By carefully grinding these two contacts—one of metal (the tool), the other of pebble slabs—with emery paste as a grinder, with much labour and skill only a very fine grain of roughness will be left on the surface of the slabs. The block of slabs being smoothed and free from scratches, is now ready for polishing. The polisher, which is of fine cloth, is an exact counterpart of the smoothing tool; and here, instead of emery, oxide of zinc or putty powder is used, mixed with water, as a polishing paste. The polishing is done by steam, with vertical spindle working from the top; the polisher, being attached to an eccentric, imitates the rotary motion of a man's arms and wrists. When the polishing is accomplished the slabs are knocked off the dummy tool or shell, and the polished side is then cemented as before, the other side being worked in like manner—the second process completing the transformation.

The second surface being polished, the slabs are again knocked off from the dummy tool and stripped of cement. They are then soaked in turpentine and wiped, when they present the beautifully transparent lenses of universal fame for coolness, brilliancy of polish and hardness, which are so essential in preserving their brightness through years of hard wear. Each one is carefully examined and sorted in two qualities, when they are wrapped in papers, marked on the outside with the number of the focus, in lots of six pairs. The pebbles are then ready for the warehouse, to be given out for inserting into spectacle frames.

Before leaving the works we were shown another, and a very important department where lenses are worked one by one. This is the oculists' prescriptions department. The majority of the lenses here, of which we saw a great number (the prescriptions coming from all parts of the country, Scotland, Ireland, India, Australia), are square, these being cylindrical or spherico-cylindrical lenses.

Round at the works in Spencer Street, where are also the office and warehouse, we saw the spectacle makers. It seems that the gold frame makers form a separate trade from the steel frame makers. The gold workshop presents very much the appearance of a jeweller's, with a gold smelting furnace. The shop of the steel workers is quite apart from the last and does not bear any resemblance to it; the work of the grooving machines is done by men, but the ordinary edging we saw done by young women.

The whole of the works give employment to over 50 men besides the young women and such a contingent of boys as a large business like this necessarily requires.

Altogether, the development of this young firm reflects credit on the technical and commercial ability of its head.

Examination of Railroad Employee's Watches in America.

GENERAL MANAGER BEACH, of the Bee Line, the Indianapolis and St. Louis Railroad, has issued the following circular regarding uniform and correct time:

"Recognising the necessity of uniform and correct time and of taking every precaution against possible accidents, and increasing the security of life and property, the Bee Line will require every trainmaster, conductor, engineman and yardmaster to have his watch examined every six months, commencing July 5, 1888, for a certificate as to quality and condition. In order that this time inspection service may be properly administered, examiners will be appointed, who shall be competent and reliable men and expert watchmakers. The minimum standard of excellence for watches shall be of a grade equal to what is generally known as the 'fifteen jeweled patent regulator,' whatever that may be, 'adjusted to heat and cold.' While the minimum quality is fixed for safety, it should be borne in mind that the finer finished movements are more reliable and more desirable for railway service. Each person designated in this order will be furnished with a certificate, which he must take to the company's examiner, and if his watch is accepted the examiner will sign the certificate and return it to the head of the department in which the owner of the watch is employed.

"When a watch is examined and does not fill the required standard it must be replaced by one which will. When a watch needs cleaning or repairing it may be left with the company's examiner for that purpose, if the owner so desires, but if he prefers to take it to his own watchmaker he is at liberty to do so, after which it shall be examined by the company's examiner and a certificate given by him; also the watch he carries during the time his own is being cleaned or repaired must be examined by the company's examiner, and for this examination the employee must pay 25 cents. When a watch is left with the company's examiner to be cleaned or repaired a watch will be loaned by him to the owner, to be used during the time his watch is undergoing repairs, free of charge. Any variation in watches, as compared with the standard time of the road, must be noted in memorandum blank in the back of the case at least once a week, and oftener if necessary. This blank, with directions, will be furnished by the examiner."

In reference to the above subject, a contemporary remarks that since a number of railroads have adopted the plan of compelling their employées to have their watches inspected by experts, and prohibiting them from carrying a watch that is not a good timekeeper, there has been considerable competition between those interested in the sale of watches to secure the appointment of inspectors favourable to them. The managers of one or two roads have found themselves in considerable hot water because the inspectors were so prejudiced in favour of a particular kind of watch that they subjected the employées to much annoyance and expense in changing the ones they had to others that would satisfy the inspectors. Of course they complained to the managers, and naturally trouble ensued. It is right and proper that railroad employées should be required to carry trustworthy watches, and that a standard of excellence should be established, but it is unfair that any inspector should insist that a particular make of watch should be carried by them. There are too many makers of watches that are reliable in every respect for any one to attempt to make a discrimination against one in favour of another. Manufacturers, however, are justified in resorting to every honourable means to sell their goods, and if they can secure inspectors in their interests, they can be depended upon to do so. But managers of railroads should be very careful to appoint only disinterested inspectors, who will establish a standard and leave the men free to buy any watch they please that comes up to that standard. No maker should be permitted to monopolise the business of any road, and the manager who permits it to be done is pretty apt to be accused of being in collusion with the sellers. The public is interested in the question to the degree that safety in travelling is dependent to a considerable extent upon trains running according to schedule time, and this cannot be done unless correct time is furnished those in charge of the trains.

Hairpins.

SAYS "an observant retailer" in the *Jewelers' Weekly*:—Unquestionably I have never seen such a rage for ornamental hairpins of every description as there seems to be at present, and the amount of artistic work that is being lavished on these ornaments is something remarkable. Some ladies seem to have a regular mania for them and are not contented with less than a score or so. Pretty Emma Juch, the operatic prima donna, owns an unrivalled collection of hairpins; not the black wire pins, so humbly useful in buttoning boots and picking locks, but hairpins idealised, pins dainty and bejewelled, such pins as those with which the pretty girl at once fastens and ornaments her locks, and which she makes her chief pet and fetich. Mme. Kalisch, who was transformed from Frl. Lilli

Lehman under such romantic circumstances last spring, is also a victim of the hairpin mania. When she sailed for Europe a few weeks ago she carried with her from 200 to 300 hair ornaments, an accumulation second only to that of Miss Juch.

The elaborate carved shell combs, which enjoyed a revival a couple of years ago, have given place to shell pins with comb tops equally large and even more intricately cut in leaf, flower and geometrical designs. Some of these are shell pins pure and simple; others are gold rimmed, banded and ornamented until they make very costly bits of jewellery.

The pin which the fair Parisian likes best just now has a shell fountain, with a spray of leaves or fine flowers in cut steel for an ornament on top. These pins are seen hereabouts to some extent, but the New York girl likes many other kinds better. For instance, she takes very kindly to a mixture of tortoise shell and amber, the body of the pin being shell, with a bunch of currants or some such small ball-like design in amber for the head. A shell pin with garnet ornamentation is as general a favourite as anything made.

The young girls' pin for all informal occasions is the silver pin. With coils, twists, loops and all manner of simple designs in white or oxidised silver she fastens her bright hair. Silver pins are summer pins because they offer such an opportunity to the summer girl. Is she a tennis player? Her hairpins show the tennis racket and ball. Does she ride? Her pins are coiled into whiplashes at the first opportunity. Does she row? What is easier than an oar in silver? The most popular silver pins are those of the yachting girls; plain hairpins with a chain or a length of rope for the loop at the top.

The daintiest of all hairpins are the small trifles in gold which act as rests for the bonnet when my lady goes a-calling. A tiny horseshoe, with nails of garnet and moonstones is a new design for one of these. Pearls and diamonds, or rubies and pearls, are more costly alternatives. Two of these horseshoe pins, with their points crossed just below the coils of black hair, make an efficient support for the gauze and flower concoction on the head, and are esteemed a necessary addition to the toilet.

The Electrical Distribution of Time.

By Allan D. Brown, Commander, U.S. Navy, Assistant Superintendent of the Naval Observatory, Washington.

A Lecture delivered before the Franklin Institute.

(Continued from page 30.)

In various cities of the continent the system of Hipp is used quite extensively; in this system a central or master-clock drives a number of secondary ones, very much after the system used at Greenwich. In Berlin there are a few clocks regulated on the Jones system, but there cannot be said to be what is regarded as an efficient time service.

Some idea of the extent of the distribution of time from observatories in this country may be gathered from the statement that there are over 124,000 miles of railway thus supplied; of this number, the Naval Observatory at Washington supplies 29,000 miles; that at Allegheny, Pa., 24,000 miles; that of the Washington University at St. Louis, Mo., 22,000 miles; being a total of 75,000 miles; the remaining 49,000 are supplied by nineteen other observatories, two of which are in Canada.

The system used by all, except the Naval Observatory, is what may be called a continuous one; that is to say, the standard mean time clock records its beats—with certain omissions—upon various sounders connected with it. In some of these clocks the contact wheel on the seconds arbor is so cut as to send the signal every second, omitting certain seconds at the close of the minute, the beat following this pause marking the beginning of each successive minute; in others, only the even seconds are transmitted, with a similar arrangement for determining the beginning of each minute; some have every fifth minute noted by an omission of a different character, and in others a like omission marks the termination of the hour. It is evident that there is no way in which to mark any particular minute; in the fifth minute system the time can be identified by a distant receiver, provided he knows what fifth minute is being signalled—in other words, if he is sure of his time within two-and-one-half minutes; in the hourly system there will be evidently no trouble in recognising the hour at its termination. As a rule, these observatories are connected by wire with the establishments of various jewellers and watchmakers in the immediate vicinity, as well as with the telegraph wires leading out of the city. At a certain prescribed hour—generally just before noon—the operator in the telegraph office switches his wires into connection with those from the observatory, and the beats of the standard clock are thus transmitted over a greater or less extent of country: the time thus received is used primarily by the railways, and secondarily by the jewellers and others in the towns through which the lines pass; in some instances these have sounders in their own offices; this is especially the case in the larger cities. In smaller towns, the signal is taken off the sounder in the office by comparison with a watch, which is itself afterward used as a means of comparing the regulator and thus ascertaining the error of the latter.

Generally speaking, the time received by the railways is only at their division headquarters, and later it is transmitted over each division wire by hand, the clock in the office being taken as the standard. The uniform train rules of the railroads now prescribe that the hours for the distribution of time shall be 5 p.m. Eastern time, or 4 p.m. Central time.

The system adopted by the Naval Observatory at Washington is like that at Greenwich, in that signals are sent only at a certain prescribed time, viz., at noon of the seventy-fifth meridian. The practice at Greenwich of altering the standard clock, and sending its beats over the wires, is not, however, that used in Washington; there the standard clock is allowed to run on and accumulate its error without interference, a separate clock, called the transmitter, being used for the purpose of sending the time signals. This clock is compared at 11.40 a.m. daily with the standard, which has itself been compared with the standard sidereal clock at 9 a.m., as well as on the evening before, if observations have been made. If an inspection of the barometric and thermometric records shows no large fluctuations, it is assumed that the rate of the clocks has been constant; if such changes are noticed, however, allowance is made for them by the observer, in accordance with his judgment, derived from previous experience. This is, in effect, the same thing as is done at those observatories where the standard clock is used, only there this clock is altered by the use of weights upon the pendulum, while with us the error of the transmitter is ascertained, and then the latter is set to the correct time. Being thus set as nearly as possible—and this can be done to within the twentieth of a second by means of a chronograph—at three and one-fourth minutes before noon the clock is switched into the circuits leading from the observatory to the offices of the Western Union Telegraph Company, the Signal Service and the Fire Alarm; the seconds transmitting wheel is so cut as to omit the twenty-ninth second, as also the last five seconds of each minute; an additional wheel is placed on the seconds arbor, having a peculiar-shaped tooth which comes into play in the sixtieth second of each minute when the proper switch is turned; as the beats progress an observer at a distant station notices the omission of a single beat; by this he knows at once that it is the half-minute signal; as some time must necessarily elapse before the signals reach stations so distant as Boston or New Orleans, it follows that all the signals will not be heard at all stations; hence it becomes necessary for the operator to take up the count at 30, and keep it up until 50 is reached; if more ticks are heard, he is made aware that there is at least one more minute to come; should, however, the ticks cease at 50, he knows that it is the last minute of the hour, and that the next signal will be that made by the transmitting clock as its seconds hand reaches the exact instant of noon. The sender at the clock at that time (ten seconds before twelve) switches out the seconds beat and switches in the minute one; as the seconds hand comes to 60, the tooth before spoken of causes the current to pass, not merely for a fraction of a second, but for the whole of that time, thus not only distinguishing it from all other signals sent, but also ensuring sufficient time for full contact of the armatures of all relays, time-ball magnets, &c., reached by it.

In connection with the observatory, reached over the wires of the Western Union Telegraph Company, are time balls at Wood's Holl, Mass., Newport, R. I., New York City, Philadelphia, Baltimore, Hampton Roads, Savannah and New Orleans. A ball is also dropped on the Navy Department building in Washington, being connected with the observatory by a special wire.

The connections from the clock are briefly as shown in the diagram on the board: A two pt. repeater of peculiar construction is placed on top of the clock case, the circuit through the coils of its magnets and the points of the transmitting springs being normally closed; as the wheel already described revolves, these points are slightly separated; the circuit is broken and the armature released, the opposite end being drawn down by the tension of a spring, making a circuit through one of the posts upon which the lever strikes and an eight pt. repeater upon a table near by; this in turn makes a circuit through the eight wires leading from it when the proper switches are turned; the other post of the two pt. repeater is used only for dropping the time ball above referred to. The action of this repeater is peculiar, inasmuch as by it the seconds beat, instead of being of but an instant's duration, lasts about one-tenth second, a great advantage in the long distances over which the signal passes. The signal sent to the fire-alarm office sets in motion an automatic apparatus, by means of which all the fire bells in the city are made to strike the hour, the first stroke being very nearly the instant of noon by the clock; of course, some allowance must be made for the action of the striking mechanism, but for all practical purposes the time thus given may be said to be exact. A like signal is sent at 7 a.m. and 6 p.m., and the bells struck at those hours.

The observatory has also in times past used the Jones system for the control of distant clocks with a very considerable degree of success, but as has been the case at Greenwich, experience has led to the abandonment of all attempts at any service outside the observatory which require the continuous use of a wire, and in which the clocks depend for their correctness upon the constant transmission of signals. As I have before said, the Jones system requires that the secondary clocks should be quite as good timekeepers as the primary, which is in itself a grave objection on account of the expense involved. If from any cause there is a fault on the line (and I need not say that such faults are too apt to occur), the secondaries go on running each with its own error, so that when the line is repaired, the connections again restored, and the current passes, it is not only improbable that all the clocks will show the same minute and second, but in the highest degree probable that they will not do so.

As in these remarks I have assumed that an astronomical observatory must be the base from which time is to be distributed electrically, but little has been said concerning the various systems of so-called electric time which are now so much in vogue. So far as I am aware, no proposal has yet been made to use the clocks of any of these systems in other than detached groups, each having its own master or driving clock, which is not in connection with any source from whence correct standard time is derived; each master clock runs at its own rate, so that no two of half-a-dozen groups will show the correct time. However practicable it might be to have such a system in a single town, or a number of such in a large city, it is quite evident that, on the score of expense alone, it would be impossible for the observatory at Allegheny or Washington to be connected with such a system in this city; and hence the time furnished by it would not be reliable.

The idea of employing the electric current as a motor for clocks is one that is very entrancing, and that has been carried out with more or less success by the inventions of various persons; reference has already been made to the early system of Wheatstone, as also to that of Hipp, which latter is probably the one that is the most widely employed on the other side of the Atlantic, and to some small extent in this country. Probably most of you are familiar with the system in use in some of the stations of the Pennsylvania Railroad, and if so, you are likewise familiar with the fact that not infrequently one or more of the dials is covered with paper to prevent its incorrect indications from misleading the public. That some of the dials should go wrong is almost inevitable, even where the lines are confined to a single building; and it may be added here that at Greenwich, where there is a similar system used, it has been found necessary to provide other clocks of the ordinary pattern, furnished with the necessary contact arrangements, for use in case of the failure of those operated by electricity. As the published reports of the observatory state that these extra ones are occasionally used, it is fair to presume that the others have not been found exempt from the failures to which all such arrangements are liable. I think that it may be safely said that experience has developed these facts: (1) That no machinery which depends upon a current derived from a battery for its motive-power is reliable; (2) That no step-by-step apparatus can be depended upon always to perform its functions; (3) That nothing is more certain than that the wires connecting any series of buildings or towns will at some time get out of order. From these facts it can readily be deduced that electro-motor clocks are not to be relied on, except within a very limited sphere, and then only with the most constant and unremitting attention to all parts of the apparatus and connections. *(To be continued.)*

Legal.

WESTREN *v.* MACDONALD AND OTHERS.

An appeal case of considerable importance to firms doing business on the "approbation" system came lately before the Inverness Court of Session, and it is satisfactory to note, both in the interests of wholesalers and of common sense, that the judgment of the inferior Court has been reversed. The facts of the case are as follows:—

An action was some time ago raised in the Sheriff Court at Inverness by Donald Macdonald, painter, Bridge Street, Inverness, to sequestrate the stock and effects of William Fraser, watchmaker and jeweller, 33, Bridge Street there, for rent. In that process a minute was put in by Peter Westren, working jeweller, 27, Frederick Street, Edinburgh, stating that a number of the articles of jewellery in Fraser's shop had been sent by him to Fraser "on sale or return," and he craved the Court to have these articles returned to him. The trustee on Fraser's estate also claimed the articles in question, and Sheriff-Substitute Blair repelled the claim of Westren and sustained the claim of the trustee, subject always to the hypothec of the landlord, Macdonald. The Sheriff-Substitute held that the right to return the goods had never been exercised by Fraser, and the obligation to pay the price had become absolute. Westren appealed to the Second Division of the Court of Session, and on Thursday the Court sustained the appeal and the claim by the appellant to the articles in question.

Lord Young said that the general question in the case was whether goods sent upon sale or return, and which were in the shop of Fraser at the time of his bankruptcy, belonged to the dealer who sent the goods or to the creditors of the bankrupt. His lordship was of opinion that the man who sent the goods was entitled to them as his property. A contract of "sale or return" was quite familiar in practice. It was of this nature: the jeweller had his shop supplied with goods upon the footing that he might deal with them as his own by selling them, in which case he was held to be the purchaser at a previously agreed-on price from the merchant who sent them to him upon these terms; or he might, after keeping them for a longer or shorter period, decline to make them his own, or fail to sell them, in which case he was entitled to send them back as never having been bought by him from the merchant, and the merchant was entitled to demand them back as never having been sold. It was a very special contract, but it was quite intelligible, and the considerations and convenience of trade which had led to it were quite intelligible. A jeweller, even in much larger towns than Inverness, could not afford to purchase a stock of expensive jewellery, and in these circumstances he resorted to a wholesale jeweller, who allowed him to have his goods in the shop upon the footing of what was called "sale or return." Now, the property of goods so sent did not pass by that contract; but if the shopkeeper sold these goods, then the property did pass, but if he became bankrupt without having done anything to appropriate these goods, without dealing with them as his own, his lordship had no idea that the property passed to him, and was attachable by his creditors. His lordship was of opinion that the contract of "sale or return" did not in itself pass property—the delivery of the goods did not pass property, it only placed the recipient in a position of acquiring the property at any time he pleased.

Their lordships concurred, and the appellant (Westren) was found entitled to his expenses against the trustee.

IMPORTANT ASSAY OFFICE PROSECUTION.

Charge of transposing the Assay Mark.

At the Birmingham Assizes, before Mr. Justice Wills, on the 7th ult., Henry Stainton (on bail) was indicted for transposing an assay mark of the Company of the Guardians of the Standard of Wrought Plate, at Birmingham, on the 19th of April. Mr. Alfred Young and Mr. W. Wills (instructed by Martineau & Co.) prosecuted, and Mr. Hugo Young and Mr. Stubbins (instructed by Messrs. Lane & Clutterbuck) defended.

In stating the case for the prosecution, Mr. Alfred Young said the prisoner was a manufacturing jeweller, carrying on business in Tenby-street. The regulations of the Assay Office provided that persons who sent goods to the Assay Office for hall-marking should register their names and have a punch bearing their initials. Prisoner had a punch bearing his initials. Prisoner sent to the Assay Office some silver articles for the purpose of being marked. They were to be marked with the quality mark of a lion passant, the office mark of the anchor, and the year mark "IV." These were impressed on the articles when they passed the assay. On the 17th of April prisoner sent what were said to be twelve dozen of earrings and one dozen and seven brooches; and on the following day he sent what were said to be thirteen dozen earrings and one dozen and ten brooches. What he really did send was a number of sterling silver blanks bearing the initials "H. S.," and also a number of pieces of silver wire. These were stated to be for the purpose of manufacturing into earrings, and he sent a specimen of the kind of earrings he was going to make out of the blanks and silver wire. The articles were assayed. On the 19th of April Detective-Inspector Van Helden, who had a warrant against the prisoner, and Mr. Westwood, the Deputy-Assay Master, went to prisoner's premises and found that the blanks containing the hall marks, instead of being made up into earrings were being made into star brooches, part of which were of an inferior quality of metal. Not a solitary earring bearing the assay mark was found on the premises, whereas between the 1st of July, 1887, and 18th of April, 1888, the prisoner sent articles purporting to be for earrings, to the number of 9,975 and brooches to the number of 4,836. Since his committal he had sent 367 articles purporting to be for earrings and 2,921 articles purporting to be brooches. That was rather a significant fact.

Detective-inspector Val Helden was then called. He deposed to going to the prisoner's premises and making the discovery described by Mr. Young. When he told the prisoner of what he was charged, the latter replied, "I have done nothing wrong; what do you mean?" Helden produced a star brooch, and said, "The charge against you is that you inserted the hall-marked earring into a star brooch of an inferior quality of silver." Prisoner replied, "It would be impossible to have a brooch assayed in the state that it is in at the Assay Office," and added that the brooch was of standard silver. Helden then proceeded to search the place, and found a number of star brooches into which the earrings—pieces of silver with the assay mark—had been and were being worked. There were also a number of spray brooches which had no place under this indictment.

Henry Westwood, Deputy-Master, was the next witness. He said the stamp with which the prisoner's articles were marked on the 17th and 18th April had a defect in the letter "N." When he visited the prisoner's premises with Van Helden he found on Philip Stainton's bench a number of brooches with cups cut out of the blanks for earrings. Four of these bore the defective mark. Assaying all the star brooches, he found the "galleries," "cups," and "balls" of sterling silver; the remainder of each brooch was 2-dwts. inferior silver.

The Judge said that it would not matter whether the other part of the brooch was good, bad, or indifferent, if the assay mark had been diverted from its original purpose. It would make difference, of course, in the amount of punishment.

Witness continued that he found 33 blanks with the assay mark on, but not cut. On a workman named Denham's bench he found twelve skeleton star brooches and ten centres or cups. Parts of these brooches were 10-dwts. under standard. On Faulkner's bench he found a number of spray brooches. These were being made of leaves sent to the Assay Office, and assayed ostensibly for earrings.

On an appeal from Mr. Hugo Young, the Judge decided that they need not go into the question of spray brooches.

Witness added that in comparing the different parts of the brooch, he found that the inferior portions weighed the heavier.

Mr. Hugo Young proceeded to cross-examine with the object of showing that prisoner would make only an infinitesimal profit out of the alleged frauds. Proceeding, he asked the witness: Can you contradict this, that the difference in the value of these earrings through the 2-dwt. inferior metal would be one-fifth of a farthing per dozen?—I don't know.

The Judge: That would be 1d. on 240; 10d. on 2,400; and on 9,600 it would be 3s. 4d. His lordship added that he supposed the wish of the prosecution was to put a stop to processes of this sort. He suggested that if the learned counsel would confer with him in his private room they might come to a conclusion.

Mr. Alfred Young said he was instructed that the great gain was in the working up of the scrap.

The Judge: If you don't answer this question in one certain way we will go on, because I don't want to put a stop to this. I desire emphatically to protect the assay. Is the object of the prosecution to warn people about these matters or is it to punish this man?

Mr. Hugo Young: On behalf of my client I was going to say that we would accept any warning.

After some further argument the counsel retired to confer with the judge in his room.

On returning into court, Mr. Hugo Young said there was no doubt his client had been guilty of an offence under the Act of Parliament—whether he had done it innocently or for small gain. He desired to admit publicly that what he had done was wrong, and must not be repeated either by him or by other people; and he desired also to give the fullest undertaking that in the future he would endeavour to steer clear of anything that could give offence to the Assay authorities. If the prosecution could withdraw, his client would feel most deeply grateful for the course taken, and would take every warning from the proceedings.

Mr. Alfred Young, on behalf of the prosecution, said that after the handsome statement of his friend he could not do otherwise than abstain from pressing this case any further.

The Judge, addressing the jury, said this prosecution was entirely justified. Ths Assay laws had grown up with the trade and with Birmingham, and they were passed in order to prevent these frauds, which, if persisted in, would destroy the trade. There could be no question about the propriety of the Assay authorities vindicating the law which had been broken. It was true that the gain in this matter had been very small, even if they allowed some discount off the estimate which had been put forward, but in many matters which would fall under the same heading the gain would be great. The Act of Parliament was intended to prevent the tampering with what is called wares, and transposing the mark from one description of ware to another. Anything which had begun to receive the stamp of manufacture, however imperfect, was a ware, and the mark upon it could not be transposed to anything else. But in future no man could say he had not had a warning; therefore the legitimate object of the prosecution had been achieved by what had taken place. He suggested then that the jury should find the prisoner not guilty.

The jury having found the prisoner not guilty,

The Judge said: Stainton, you may go your ways. You have been most kindly dealt with by the Assay people, and I am sure you will bear in mind what has taken place, and avoid transgressing the law which for other transgressions will be vindicated.

WITH reference to the foregoing case the *Birmingham Post* has the following editorial "Not guilty, but don't do it again." That is in substance the verdict given at the Birmingham Assizes, in the Assay Mark case, in which Henry Stainton, a manufacturing jeweller, was charged with unlawfully transposing the Assay Office mark on certain articles of silver jewellery. The charge was in effect, that the prisoner, having obtained the assay mark on sundry strips of silver professedly intended for earrings, introduced and incorporated these strips in larger ornaments, such as brooches, composed of inferior metal, which were thus made to appear as though they had passed the assay. Suspicion had been excited against the prisoner by some reports which reached the ears of the Assay Office authorities, and on the 17th and 18th of April a trap was laid for him by bringing into use for his goods a special stamp with a flaw, which would serve to mark the occasion on which it was used. On the first day the prisoner sent in what were represented to be twelve dozen silver earring blanks, and one dozen and seven blanks for brooches, and on the day following he sent in thirteen dozen earrings and one dozen and ten brooches also in the blank form, and in each instance they were accompanied by specimens of the finished article he proposed to make. As the blanks were of the quality represented—viz., 11 oz. 2 dwts. silver to the pound troy, they were marked accordingly; and the following day, in consequence of information received that the marks were being used for improper purposes, a warrant was obtained for prisoner's arrest, and a detective raid was made upon his premises. Here suspicion was promptly confirmed by the discovery that the silver blanks, instead of being made into earrings, were being worked into star-pattern brooches composed of inferior metal, and not a solitary earring bearing the mark was to be found about the place. When prisoner's attention was called to the irregularity he professed to believe that there was nothing unlawful in it, and intimated that he adopted the expedient purely as a matter of convenience. On examination of the brooches, however, by the Assay authorities, it appeared that the expedient represented also a pecuniary gain to the prisoner, as the body of the articles was of a lower quality silver than the part assayed. Even if there had been no gain involved, Mr. Justice Wills held that the Assay mark having been diverted from its original purpose, the illegality was the same, though the moral culpability might not be so obvious. As it appeared, however, that the gain on some of the articles would be only a farthing on sixty, and the object of the Assay Office was not so much to punish this particular transgressor, as to warn manufacturers generally against a malpractice, the Judge ultimately invited the counsel on either side to a private conference. On the return of the parties into Court, Mr. Hugo Young, on behalf of the prisoner, frankly admitted that he had been guilty of an offence under the Act; and he undertook, if the prosecution were withdrawn, that his client would steer clear of every irregularity in future. This confession and apology having been mercifully accepted on the part of the Assay authorities, the judge, after a little homily on the legal aspects and dangers of the case, in the course of which he entirely justified the prosecution, expressed his opinion that every legitimate object had been obtained by the publicity that had been given to the facts and the prisoner's acknowledgment of his error. In conformity with his Lordship's suggestion, the jury then returned a verdict of "Not guilty," to which the judge appended a suitable warning to the prisoner, who was thereupon discharged. Mr. Stainton has had a narrow escape, and if any of his trade competitors are addicted to similar irregularities, it is to be hoped they will take warning by his experience, and reform their practice before the Assay Office take action against them.

Gazette.

PARTNERSHIPS DISSOLVED.

Mojon, Montandon & Co., Bartlett's Buildings, Holborn, watch manufacturers. Turner & Co., Bournemouth, watchmakers. Roberts & Timm, Sheffield, silversmiths. Eames Brothers, Station Buildings, South Kensington, watchmakers. Thomas Blundell & Sons, Liverpool, watchmakers. A. Kleiser & Co., Reading, watchmakers. Hyde & Harris, Workington, pawnbrokers. G. & J. Bushell, Birmingham electro-platers.

THE BANKRUPTCY ACT, 1883.

RECEIVING ORDERS.

To surrender in London.—Jacob Shonman, Whitechapel Road, watchmaker.

To surrender in the Country.—Colman Isaacs, Merthyr Tydvil, pawnbroker. Thomas Johnson, Ossett and Newcastle-on-Tyne, watchmaker. James Dean, West Malling, watchmaker. A. J. Davis and Elkin Davis, Manchester, pawnbrokers.

PUBLIC EXAMINATION.

E. J. Bone, Fulham Road, watchmaker; September 18, at 11. T. Johnson, Ossett and Newcastle-on-Tyne, watchmaker; October 9, at 11. C. Isaacs, Merthyr Tydvil, pawnbroker; September 3, at 3.

ADJUDICATIONS.

In London.—J. Shonman, Whitechapel Road, watchmaker. E. J. Bone, Fulham Road, watchmaker.

NOTICES OF DIVIDENDS.

In London.—C. Medlock, New Street, Dorset Square and elsewhere, watchmaker, 3*s.* 9¾*d.*, first and final; any day except Saturday, Chief Official Receiver, 33, Carey Street.

In the Country.—W. H. Stokes, Birmingham, manufacturing jeweller, 8¼*d.*, first and final; any Thursday, Fisher & Randle, Birmingham. W. Green, Birmingham, manufacturing jeweller, 1*s.* 10½*d.*, first and final; 120, Colmore Row, Birmingham. J. A. Easdon, Gainsborough, jeweller, 6½*d.*, second and final; any day, G. Jay, Lincoln. L. Desgardin, Bristol, jeweller, 6¾d., first and final; August 27, Official Receiver, Bristol.

Applications for Letters Patent.

The following List of Patents has been compiled especially for *The Watchmaker, Jeweller and Silversmith*, by Messrs. W. P. Thompson & Boult, Patent Agents, of 323, High Holborn, London, W.C.; Newcastle Chambers, Angel Row, Nottingham; and 6, Lord Street, Liverpool.

10,646. Ernest de Pass (a communication from Felix Balavoine, Switzerland), for "Improved manufacture of non-magnetic compensating balance wheel for watches and clocks." Dated July 23, 1888.

10,734. Frank Walter Hayward and Frederick Mills, London, for "Improvements in brooches, lockets, and other articles of personal adornment, and in apparatus for imparting motion to parts thereof, a portion of the said apparatus being also applicable for other purposes." (Complete specification.) Dated July 24, 1888.

10,737. H. H. Lake (a communication from the American Waltham Watch Co., United States), for "An Improved device for holding mainsprings of watches, clocks, or the like." (Complete specification.) Dated July 24, 1888.

11,087. William Nye Weeden, London, for "Improvements in watch and clock pinions, and in the method of and apparatus for manufacturing the same." (Complete specification.) Dated July 31 1888.

11,088. William Nye Weeden, London, for "Improvements in arbors for clocks and watches, and in the method of manufacturing the same." (Complete specification.) Dated July 31, 1888.

11,220. George Frederick Redfern (a communication from Messrs. Wirth & Co., Agents for Robert Winter, Germany), for "Improvements in bracelets, earrings, and other articles of jewellery." (Complete specification.) Dated August 2, 1888.

11,308. John Cameron and Alexander Maxwell Grant, Glasgow, for "Improvements in converters of furnaces for treating silver, copper, nickel and cobalt, or their compounds." Dated August 4, 1888.

11,348. William Burrow Shorland, Manchester, for "Improvements in solitaires and studs." Dated August 7, 1888.

11,387. Ferdinand Bachschmid, London, for "Improvements in the escapement of watches, chronometers, clocks and the like." Dated August 7, 1888.

11,399. Claude Theodore James Nautin, London, for "An improved method of extracting gold from the various auriferous ores." Dated August 7, 1888.

11,627. Bertrand Hamburgh, Paul Ketterer and Eduard Ketterer, London, for "Improvements in apparatus for displaying watches, jewellery, and other articles or goods." (Complete specification.) Dated August 11, 1888.

11,684. Issicher Goldinger, Manchester, for "An improved watch protector, or clasp, for holding a watch while in the pocket." Dated August 14, 1888.

Recent American Patents.

Alloy. D. O'Hara, J. Logan and D. W. Eldridge	385,955
Alloy of Copper, Nickel and Gold. D. H. Church	385,909
Calendar Clock. P. F. Nilson	387,005
Collar Button. E. T. Dahlberg	386.002
Combined Pen or Pencil Holder and Pin. S. F. Stewart ...	387,187
Cuff Holder. G. J. Cline	386,382
Cuff Holder. R. C. Dutton	386,426
Eye Glasses. J. Bowles	386,799
Napkin Ring. E. C. Bowling...	385,995
Repair Clamp for Spectacles. N. J. Eddy	386.004
Safety Pin for Brooches	386.194
Watch Case. C. K. Giles	386,398
Watch Case Pendant. F. W. Schimmel	387,011
Watch Case Spring. N. J. Felix	386,308
Watch Mainspring. D. H. Church	385,908

A printed copy of the specifications and drawing of any patent in the American list, also of any American patent issued since 1866, will be furnished from this office for 2s. 6d. In ordering, please state the number and date of the patent required, and remit to J. TRUSLOVE, Office of *The Watchmaker, Jeweller and Silversmith*, 7, St. Paul's Churchyard, E.C.

Correspondence.

All Letters for Publication to be addressed to the EDITOR *of* THE WATCHMAKER, JEWELLER AND SILVERSMITH, 7, *St. Paul's Churchyard, E.C.*
All communications must bear the name and address of the sender, not necessarily for publication, but as a guarantee of good faith.

TO THE EDITOR OF *The Watchmaker, Jeweller and Silversmith.*

SIR,—I beg to enclose, for the information of Watchmakers, a form, giving particulars as to the Trial of Deck Watches, which will take place at the Royal Observatory, in November next.

I am, SIR,
Your obedient servant,
W. H. M. CHRISTIE.

Royal Observatory, Greenwich,
London, S.E.
August 16, 1888.

TRIAL OF DECK WATCHES AT THE ROYAL OBSERVATORY, GREENWICH, IN NOVEMBER.

A Trial of Deck Watches will take place at the Royal Observatory, in November of this year.

Chronometer makers who may desire to send watches to this trial must first obtain permission from the Hydrographer, Admiralty, Whitehall, S.W., to whom all requests for such permission must be sent not later than November 5.

The watches are to be deposited here between the hours of 10 and 1 on any day (excepting Sunday) during the week ending with Monday, November 19, after which date no watch can, under any circumstances, be received.

The rating this year commences on Saturday, November 24, and will be as follows:—

Watch Horizontal, dial up, in room for 2 weeks.
" " " in oven " 1 week.
" Vertical, pendant up, in oven for 4 days.
" " " right " 3 "
" " " left " 3 "
" " " up " 4 "
" Horizontal, dial up " 1 week.
" " " in room for 4 weeks.

The mean temperature in the oven will be from 80° to 85° Fahrenheit.

The watches are to be in silver cases, with crystal glass, and each must bear a distinguishing No. engraved on the plate of the movement.

Each watch is to be labelled with its price, which is to include a mahogany box with ivory label, cleaning after trial, and engraving the Government mark on the dial and plate of the movement, and the name of the maker, the No. of the watch, the letters D.W., and the Government mark on the ivory label of the box, as in the annexed form.

STRIKE IN THE WATCH CAP TRADE.

DEAR SIR,—Would you kindly insert the following, in answer to the letter of Mr. W. Terry, of Spon Street, Coventry (relative to the movement of the Watch Cap Makers for an increase of price), published in your issue of August 1, 1888.

In the first place, Mr. Terry is totally wrong in stating that the increase asked for is 4s. per dozen; there may be one or two isolated instances where the increase amounts to 3s. per dozen, but in no case does it amount to 4s.

We have compared notes throughout the trade, and we find that the average increase asked for does not amount to more than 1s. 6d. per dozen. At the same time Mr. Terry says nothing at all about the deductions pressed upon us by the manufacturers during the past 2½ years; taking my own experience, I was dragged down from 12s. to 8s. per dozen for first class work, and considering we have to find all the material of which the Cap is composed, it left very poor pay for the labour, in fact, it was not a living, it was but an existence. I think the foregoing remarks will show that we are not pressing too hard in the amount demanded (viz., Minimum Price of 10s. per dozen), a price we feel that is perfectly reasonable from the response we have had from the manufacturers up to date, very few indeed demurring to the price.

Further, we fail to see what Mr. Terry has to do with our affairs, we never asked for his advice; neither do we want it, nor his opinion either, but blessed are they that can mind their own business.

And now, Mr. Editor, as to your charitable remarks relative to the form of movement; we maintain that the Capped Movement is the best guarantee to the general public that the watch is of English manufacture and if your suggestion was adopted, we think it would meet with the same fate as the 24-hour dial and also be the death blow to what is left of our English trade, for it would destroy the distinctive feature between English and Foreign work. Thanking you in anticipation for inserting this rather long letter.

I am, DEAR SIR,
Yours, &c., &c.,
M. J. THOMPSON,
Secretary.

Coventry Watch Cap Makers' Society.
8, Payne's Lane, Coventry.
August 20, 1888.

Buyers' Guide.

The Sheffield Smelting Company, Sheffield, *Sell* Gold and Silver (pure and alloyed). *Buy* all materials containing Gold and Silver.

Jones, E. A., Wholesale Manufacturer of Whitby Jet Ornaments. A Large Assortment of the Newest Patterns always in Stock. Export Orders promptly executed. Persons not having an account open will avoid delay by forwarding a reference with their order. Customers' Matchings and Repairs with despatch. 93, Hatton Garden, London, E.C.

S. Ockenden, Chronometer and Watch Jobber to the Trade, 155, Goswell Road, London. Staffs, Pinions, Cylinders, Conversions, &c. Price list on application.

T. & J. Bragg, Vittoria Street, Birmingham, Goldsmiths, Jewellers Diamond Mounters. Art Silversmiths. *By special appointment to Her Majesty the Queen.* Royal and other orders, and Insignia, Mayoral Chains Maces, Corporate Seals, Caskets, Keys, Swords. Masonic Jewellers.

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A WATCHMAKER'S and JEWELLER'S BUSINESS in important market town. Established 100 years. No goodwill. Stock and fixtures by valuation, about £550. Books for last 7 years shown. Profits from sales and jobbing between £200 and £300 per annum. Principals and Solicitors only may address to A.B., TROUGHTON, LEE & KIRBY, Solicitors, Coventry.—[ADVT.]

The Watchmaker, Jeweller and Silversmith.

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The Watchmaker, Jeweller and Silversmith.

A Monthly Journal devoted to the interests of Watchmakers, Jewellers, Silversmiths and kindred traders.

Correspondence.—Correspondence is invited on all matters of interest to the trade. Correspondents will please give their full address in each communication, not necessarily for publication, but as a guarantee of good faith.

Subscription.—A copy of the Journal will be sent monthly for one year, post free, to any address in the United Kingdom or countries in the Postal Union for 5s. payable in advance.

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7, ST. PAUL'S CHURCHYARD,
LONDON, E.C.

Cheques and Postal Orders to be made payable to J. TRUSLOVE.

Editorial.

IN the death last month of Mr. Richard Anthony Proctor, at the early age of 51, astronomers, great and small, will feel the loss of an old and valued friend, while the grief experienced by all who were more or less intimately acquainted with him will be greatly intensified by the almost tragic suddenness of the sad event. Mr. Proctor, who had married an American lady during one of his lecturing tours in the United States, was on his way home from his farm in Florida, where he has lately been residing, and where he contracted the seeds of the dreaded "Yellow Jack," which is just now raging in that State. He had reached New York, and was taken ill at his hotel, and, although the hotel proprietor is said to have had suspicions of yellow fever, it was not until the black vomit, which is the most marked symptom of the disease, made its appearance, that the physicians in charge of the case were decided as to what ailed him. He was, perhaps, best known to many of our readers by the part he took in the astronomical controversy some years ago between Mr. Norman Lockyer and himself, in which the two principals were joined respectively by the late Astronomer-Royal, Sir G. B. Airey, on the one side, and Lord Grimthorpe, then Mr. E. B. Denison, or Sir Edmund Beckett (we forget which), on the other. Besides astronomy, however (in which science he was past master, and, as an interesting and lucid expositor of the same in all its complexities, *facile princeps*), he was the popular exponent of many other of the essential qualities of natural disposition. His versatility in this respect indeed was boundless, and for the large and interested audiences which his graphic lectures on astronomical phenomena gained him, and the still greater numbers of readers of his published works, which included treatises on "Whist," "Poker," "Baseball," "Strength and Happiness," and various other popular subjects, treated scientifically, the void created by his loss is one that cannot be easily filled.

Silver.—Various rumours of possible continental government requirements have been agitating the silver market during the past month, and the price for Bars rose in the middle of the month to 45d. per ounce. No doubt the sudden rise in the quotations was largely due to the action of bulls speculating on the strength of the rumours aforesaid. It was pointed out at the time in influential quarters that the rise was the result of some such artificial conditions, and buyers were advised to wait for the inevitable fall, as no possible syndicate would be strong enough to corner this market, and that should a much further rise take place a supply could be obtained from India herself. Apart from the action of speculators, however, a legitimate rise has undoubtedly taken place, and this is justified on the ground of a probable demand for silver currency for India, in exchange for produce of various kinds which the bad harvests at home and on the continent make it necessary to buy from the East. The present quotations (43d. and 42d. per ounce) for Bars and Mexican Dollars, respectively, seem therefore likely to be maintained for some time to come. In the meantime, as these conditions are altogether abnormal, it will be advisable for those who are not in want of an immediate large supply to buy in small quantities until the market becomes easier, which in the ordinary course of things is sure to happen.

General Notes.

Mr. Richard A. Proctor, the well-known astronomer and editor of *Knowledge*, died of yellow fever, at New York, on September 12. He was in his 52nd year.

During her recent visit to that country, Madame Adelina Patti was presented by the President of the Argentine Republic with a brooch having the form of a jockey cap, and set with pearls and diamonds.

The secretary of the Mount Morgan Gold Mining Company reports that Messrs. Johnson, Matthey & Co. have received 638 ozs. 12 dwts. of gold from the mine, of the value of £2,194 10s. 1d., being the proceeds of the company's operations for the period ending August 25.

J. H. Dixon was last month sentenced to six months' imprisonment by the Liverpool magistrates for stealing from Lime Street station a bag containing jewellery of the value of £57, the property of Mr. W. H. Jackson, commercial traveller, in the employ of Messrs. Griffith & Sons, jewellers, of Birmingham.

Coventry Technical Institute.—An examination of the horological classes, which are under the direction of Mr. J. W. Player and Mr. Bonniksen, will be held in May next, when certificates will be given to the most proficient students. Students may also sit for the City and Guilds of London Institute's Examinations in watch and clock making.

Following close upon the decease of the late Mr. King, another well-known antiquary has quitted this stage. Mr. C. O. Morgan is dead. The *Athenæum* refers to the news in the following terms :—Mr. C. O. Morgan, brother of the first Lord Tredegar, and Conservative Member for Monmouthshire from 1841 to 1874, who died at Newport, Monmouthshire, on August 5, has bequeathed, it is understood, to the British Museum his old clocks and other relics. By his death the country has lost one of the few remaining men of the good old school of enthusiastic and diligent antiquaries. He was the author of publications on antiquarian subjects. As a contemporary of Bernal, Sibthorpe and Bale, there was no better-known frequenter at Christie's, and other auction rooms.

In Paris, a jeweller who sells imitation jewellery, or who mixes false gems with real, is legally bound to declare on his shop door the nature of his goods. Sometimes the words *or et imitation* appear combined, and then each article must be marked one or the other. Now that our legislature has protected (!) the public from the watchmaker, says *Invention*, perhaps similar steps will be taken with respect to the dealer in trinklets.

A painful sensation has been caused in the North by the recent sudden death, while on the return journey from the Glasgow Exhibition, of Mr. John Marr, jeweller, of Falkirk. Mr. Marr, who retired eleven years ago in favour of Mr. Gavin N. Hamilton, had been engaged in business as a watchmaker and jeweller in Falkirk (his native town) for the long period of 40 years, and was universally respected. Undue fatigue and excitement, following upon a period of depression, were the cause of death.

On September 14, Charles Paul asked a young lady in Mr. Arnold's jeweller's shop, at 72, Baker Street, Portman Square, what would be the cost of mounting a florin. Suddenly he caught sight of a tray of watches, and bounded across the shop, seized the tray, and was making off. The sight of Mr. Arnold seemed to startle him, and the thief caught his foot in the leg of a chair and the tray and its contents went flying. The watches were worth £300. The man was caught after a chase, and was committed at Marylebone.

L'Almanach pour Horlogers for the year 1889 has come to hand, and we congratulate Mons. Charles Gros, fils, the able editor, upon the number of useful and interesting articles he has this time got together for the benefit of its large circle of readers. The subjects range in variety from the jeweller's strong box to electrical clocks, &c. ; and each one of the present issue is numbered separately, entitling the possessor to participate in a lottery, the 55 prizes in which vary from a striking clock, valued at 30 fr., down to various lots valued at 1.50 fr. ; in addition to which, two special prizes are to be drawn for, being a regulator and fruit dish. A sum of 50 fr. is also offered for the best unpublished essay on stop-work.

The *Queen* says that watch faces are shown broadcast in every available situation. They are inserted in the bindings and covers of a large variety of articles, not only of pocket books and cardcases, but of albums, blotting books, cigarette and cigar cases. Even the humble match box is elevated to the dignity of a timepiece ; while the monumental inkstand, including a clock and the paper weight with a similar addition are by no means rare. Bracelet watches are now as common in Paris as in London ; they are introduced into gold cable bracelets, as well as imprisoned in leather straps of divers colours. Those who do not care to carry their watches on their sleeves slip them into the bosom of their dresses, from which hangs the short chain, terminated by the gold, and sometimes bejewelled ball, tassel, heart, acorn, &c., that is now merely an ornament, and at others conceals a pencil case or locket.

The "Beginner's Guide to Photography."—The popularity of photography has been largely discounted by the mystery in which it is involved to the uninitiated and the difficulty of surmounting obstacles, real and imaginary, at the commencement. The publication by Messrs. Perken, Son & Rayment, of 99, Hatton Garden, E.C., of the above useful manual will go far to clear the path for the beginner and induce many who have hitherto been deterred from the foregoing considerations to take up the pursuit of an interesting and invaluable art. The unpretending title by no means fully expresses the scope of the book, in which is to be found every detail of a photographer's wants, including the apparatus required, details connected with the various manipulations, chapters on making lantern slides, on enlarging, and on photomicography. The book is fully illustrated, and a chapter on "Exposure," containing tables and simple directions, by Mr. A. S. Platts, forms an appendix which will be much appreciated by learners.

We are glad to learn, says the Natal *Mercury*, of August 10, that there is no probability that the obnoxious Diamond Trade Bill will be submitted this session. The question will, we believe, be postponed until next year. As the Legislative Council has more than enough work of far greater importance to engross its attention, it will be just as well that precious time be not lost in considering a measure the fate of which is a foregone conclusion. The relief of Kimberley mining interests must be sought for in other ways. If the Bill is not brought forward, it is waste of time to discuss it.

According to the *Tägl Rundschau*, a new watch will shortly appear in the Trade. M. Gigon, of Chaux-de-Fonds, is the inventor, and calls it "The Memento Watch." The face bears a calendar and dates, and to this calendar M. Gigon's invention applies. If you have an appointment, a law-suit, or a rendezvous on some distant day, you set your watch, and when the day comes round, a little figure or hand will point to the date and hour. The invention will be useful to busy people, but not to the lover, who never forgets his appointments, nor to the litigant, who rarely forgets, though he tries to, the date his case is down for hearing.

The Queen-Regent of Spain is stated to be about to send to the Duchess of Edinburgh, as a souvenir of her visits to Barcelona and Madrid, a fan that is a truly royal present. It is made of tortoise-shell, with the monogram of the Queen-Regent in brilliants and rubies. But its chief value is in the paintings done on it by the Spanish artist, Melida. There are six pictures on the fan—three on each side. The first set represents two sailors, one English and the other Spanish, hoisting their respective colours from a Spanish balcony; a view of the harbour of Barcelona; and a most delicate representation of an old Gothic monument that the Queen and the Duchess visited together. The other side of the fan has the coat-of-arms of the Duchess, an Andalusian girl at her balcony, and a Cordobese bandit—an allusion, perhaps, to the robbery, of which the Duchess was the victim, during her voyage from Cordova to Granada.

Electro-Plating with Platinum.—Platinum, says the *Scientific American*, has not been much used in electro-plating, notwithstanding its hard, durable and protective properties. This is perhaps chiefly owing to the practical difficulty of obtaining a good firm "reguline" deposit. A process for effecting this has, however, been brought out recently by a Mr. Bright, whose patents have been acquired by the Bright Platinum Plating Company, and are in actual operation in London at works established there. Platinum has the advantage of keeping its colour where silver, brass or copper becomes discoloured, and will, to some extent at least, replace the use of these metals in electrotyping. It will be highly useful in plating chemists' crucibles and so on. German silver, for example, plated with platinum, can be used to manipulate strong acids. By the Bright process platinum can be deposited on any surface which can be electro-plated with other metals.

The shareholders of the Opal Mines of Queensland are to be congratulated, says a contemporary, on the result of the first year's working. It appears from the speech delivered by Mr. George Hopkins, the chairman at the meeting held on the 20th ult., that opals to the value of £7,576 have been sold by the company during the year, and that, after crediting all expenses, both in London and at the mine, there is on the year's trading a net profit of £4,664 12*s.* 4*d.* The directors have had a great many difficulties to contend with. First and foremost they have had that silly prejudice which exists that the opal is an "unlucky" stone. Why unlucky it is not easy to say; but there is no doubt that the prejudice does exist to a very great extent, although it is rapidly disappearing. Then, hitherto the business in precious opals has been confined to certain channels, and it is very difficult to disturb the course of business where it has been carried on for a number of years in any particular channel. However, under all these circumstances, the company has made considerable progress.

Early on the morning of August 27, an important discovery was made in the rear of some unoccupied premises situated between the new Carriage Bazaar in Long Acre and Arkell's coachbuilding works. The place in question has long been empty, and with the view of making some structural alterations, workmen have been recently set to work. In demolishing a thick party wall, the men laid bare a chamber which was filled with an immense quantity of plate, watches and jewellery, the value of which is considerable. Many of the articles, which were black with age, were also partly fused, evidently from the action of great heat. It has now been ascertained that the place was occupied many years ago by a jeweller and refiner named Armstrong, and during his tenancy was destroyed by fire, the occupants being burnt to death.

The one hundred and twenty-third half-yearly general meeting of the subscribers of the Goldsmiths' and Jewellers' Annuity Asylum Institution was held on August 30, at the Horological Institute, Clerkenwell. Mr. William Webber, one of the vice-presidents, presiding previous to the meeting, the voting for the election of annuitants took place. Out of 9 male candidates, J. A. Norman, 63; F. Ayre, 74, and E. White, 64, were elected, and out of 4 female candidates, Martha Gates, 66, a widow, was elected. There were also 4 candidates for the asylum, of whom Eliza Downing 68, was successful. In their report the Committee stated, that although there was no increase in the number of subscribers, there was no falling off in this respect. This was not the case with invested capital, however, owing to the altered conditions with respect to the conversion of stock, and a considerable reduction would be made in the interest received in the future. The following was the state of the finances on June 30:—Invested in consols in the names of the trustees, £3,000; invested in new 3 per cents £5,500; consols in the name of the Accountant-General, High Court of Justice £787 9s. 1d; due from benefit account £15 3s. 11d; and cash balance at bank £817 10s. 11d., making a total of £10,120 3s. 11d.

The Diamond Market.—The somewhat small demand for finished goods has been rather increasing in the *Amsterdam* market during the month, but the fair of Nishni-Novgorod did not realise the expectations of the Dutch folk (who look forward to it annually for the disposition of a large amount of cut diamonds) owing to the action of the Russian police, who refused licences to what are known as merchants of the second guild. *Rough* is meeting with enquiry, and the factories are reported busy, although prices are still bad from the sellers' point of view. *Yellow* is in less demand.

The *Paris* setters are making up stock for the New Year's trade, which commences early for exportation. Most of the trade done is on the American account as usual, but numerous other buyers are speculating, and altogether the market is very animated.

Prices ruled somewhat higher in the *London* market, but numerous foreign buyers being present throughout the month, the supply in the market, which has varied a little from the fields, has been mostly dispersed, the better qualities being in more demand. The "Tartar," "Grantully Castle," "Trojan," and "Drummond Castle," are the steamers that had arrived from the Cape up to date.

Latest from *Kimberley* report market firm, with all classes of stones in good demand.

Metals.—Latest quotations:—*Silver*—Bars, 43d.; Mexican dollars, 42d. per ounce; market steady. *Copper*—In this market the excitement may now be said to have completely subsided, and prices are somewhat lower, viz.: Chili bars, good ordinary brands, cash, £95 to £97; G.M.B., £77 to £77 7s. 6d.; Australian, nominal. *Tin*—Fine foreign, Straits, £103 10s. to £104; Australian, £103 12s. 6d. to £104 2s. 6d. *Lead*—Spanish soft, £14 5s. buyers, £14 7s. 6d. sellers; English, £14 10s. to £14 12s. 6d. *Spelter*—Ordinary brands, £18 15s. to £18 17s. 6d.; special, £19 to £19 2s. 6d.; English soft, £19 5s., Swansea. *Quicksilver*—Importers' price, £9.

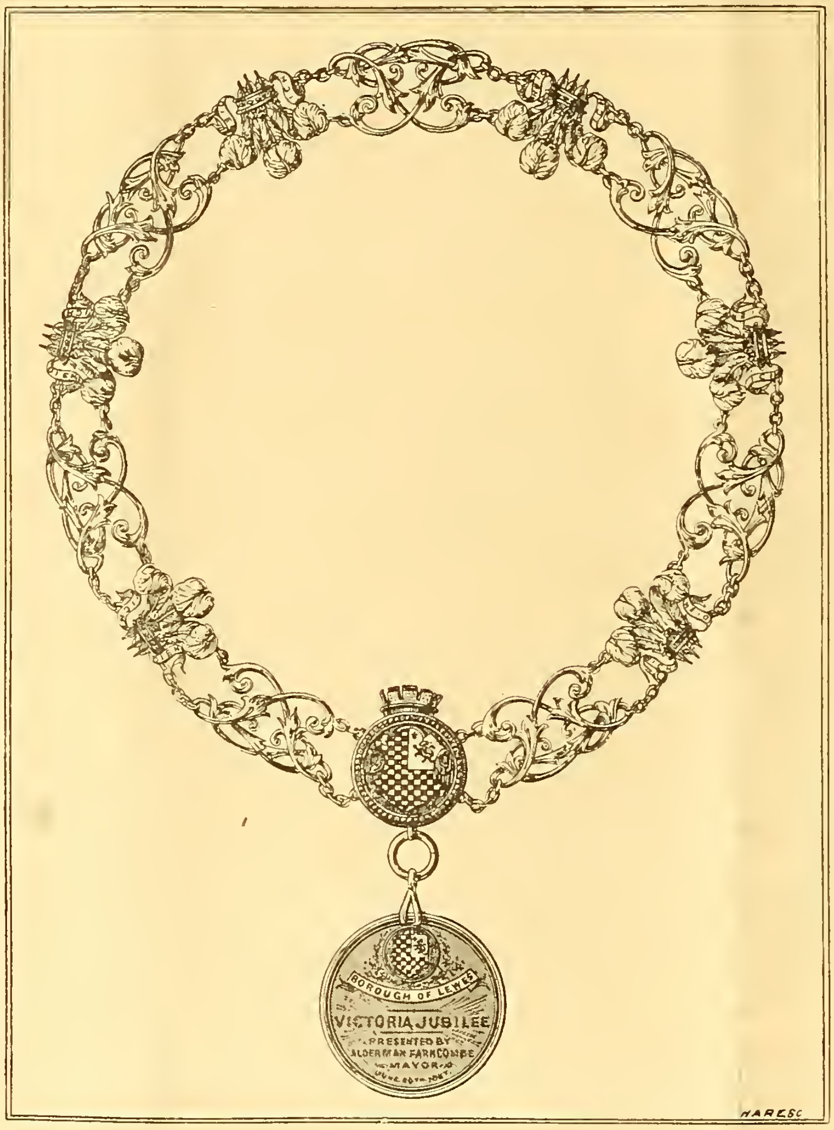
Trade Notes.

Messrs. G. E. Walton & Co., of 52, Hylton Street, Birmingham, have just introduced to the trade a small novelty which will be appreciated by jewellers. This is a clip by means of which collar and other studs, solitaires, &c., can be instantly attached to or detached from the cards. It is a small detail, but it is the small things that go to make up the sum of human (and the jeweller's) happiness.

Under the name of "Wristocrat," Messrs. Seer & Co., of 90, Stock Street, Manchester, have introduced to the market a development of the wrist strap for carrying watches, in the shape of a wristlet with hook and swivel attachment, to which ladies going shopping may fasten a purse or other article, and thus secure immunity from the attentions of that numerous class of thieves, to whom ladies purses, etc., either carried in the hand or jacket pocket, are an irresistible attraction. The idea could doubtless be further extended by the manufacture of various forms of the attachment in the precious metals.

Presentation to Earl Dudley.—As a mark of esteem on attaining his majority, the members of the Dudley Troop of Worcestershire Yeomanry (of which his Lordship is captain) subscribed for a beautiful gold cigar case, the manufacture of which was entrusted to Messrs. T. & J. Bragg, of Birmingham. It is hall-marked and weighs some seven ounces; it is arranged to take the four cigars with the least possible thickness in wear, and is shaped to fit closely in the pocket. One side is decorated with the Earl's coronet and monogram, both raised in wrought and carved gold; the other bears the inscription:—"Presented by members of the Dudley Troop, Queen's Own Worcestershire Hussars, to their captain, the Right Hon. the Earl of Dudley, on attaining his majority, 25 May, 1888." The presentation was made at Himley, on August 30, and his Lordship in acknowledging the gift said that during the week he had received many addresses of congratulation and also numerous presents, but there was no presentation which he appreciated more sincerely than the one that had been made him that day. He certainly should keep that exquisite cigar case as a memento of that happy occasion. He was glad to see the members of the troop looking hale and hearty. During the past two years they had worked well, and he was glad that they had increased in numbers.

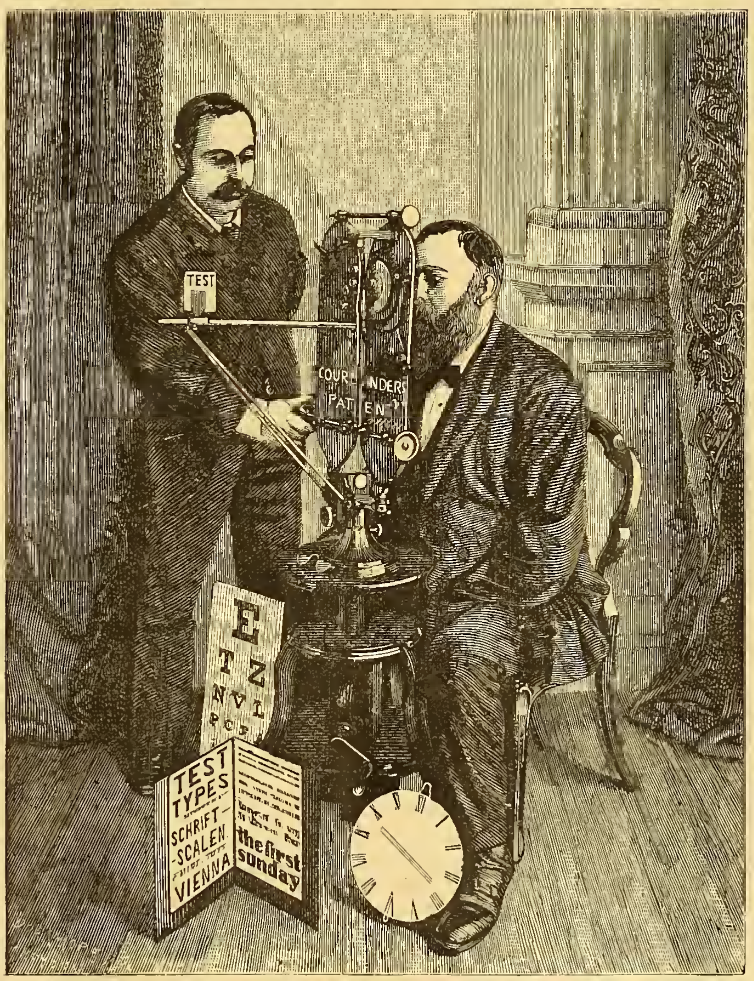
Official Chain for the Mayoress of Lewes.—The idea of the Mayor of Lewes, Alderman Farncombe, of commemorating the silver wedding of the Prince and Princess of Wales, by presenting to the Corporation of the ancient Borough a gold chain, intended to be worn by the Mayoress of Lewes, for the time being, as a badge of office when discharging any public duty, as carried out by the same firm, is decidedly novel and appropriate. The chain is about 20 inches long, the links of gold being formed of entwined capital L's, alternating with Prince of Wales's feathers in silver, and joined in front by an escutcheon bearing the Lewes Borough coat of arms, surmounted by a civic crown, and engraved on the back with the words "Ann Catherine Farncombe, Mayoress, 1888." Affixed to the escutcheon is an attachment, whereby the gold jubilee medal given to the town may be worn as a pendant. The chain has been executed with great taste and skill, and is, with the medal, enclosed in a morocco case, bearing the Borough arms in gold outside.



Clerkenwell watches are not things of the past, nor are they likely to be, so long as manufacturers can be found public-spirited enough to face the difficulty and meet the demand. The Merchandise Marks Bill said, to be sold as English watches they must be made in England, and the question was asked "What about complicated work?" We are happy to say the matter has been set at rest, Messrs. Usher & Cole having just completed two watches, both of which are fusee keyless, both minute repeaters, and one of them a perpetual calendar as well, the whole of the work having been made from the rough metal by their own English workmen; we are glad that Clerkenwell has won back an industry for which it was formerly so justly famous.

Visiting recently the warehouse of Messrs. H. J. Cooper & Co., of 150, Oxford Street, we were much impressed by the extent and variety of the goods shown to us. Besides watches, clocks, new silver-mounted cut-glass goods, a thousand-and-one pretty, useful articles suitable for presents for the Autumn and Christmas trades, and every sort of jewellery, the firm supply wool, tickets, cases, card-boxes, and all the little essentials of the jewellery trades. To those of our readers at present not dealing with this enterprising firm, we would say, call and see them the first opportunity, and in the meantime write for their illustrated price list, which will be found both interesting and useful.

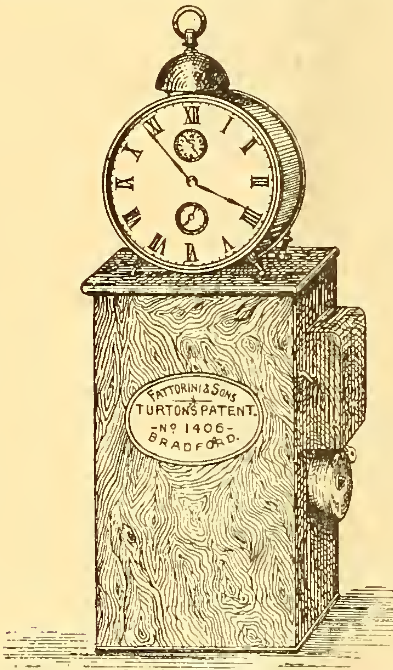
Courlander's Optometer.—The illustration shows this unique instrument for gauging all the complications of defective vision. Mr. L. Courlander, of 42, North End, Croydon, the patentee and inventor, claims for it that it is the only perfect instrument (fulfilling all the various scientific requirements) that has ever been constructed. We took the opportunity, while in the neighbourhood the other day, of inspecting it, and it certainly seems to us admirably adapted to its various ends, containing, in itself, all the combinations and permutations of the optician's test case, and as it is handsomely mounted in every particular, and is withal a somewhat showy and complicated looking piece of mechanism, it will have the merit of impressing spectacle buyers with the optical skill of the operator. Notwithstanding its, at first sight, rather formidable appearance, its working is exceedingly simple and can be learned in a few minutes by anyone who can use the test case. The patient sits down at the back of the instrument, and the upper portion is raised from the pedestal by an Archimedean screw until the two apertures are level with the eyes. For distance, the instrument is perfectly vertical, and for reading it is tilted to an angle of fifteen degrees. For adjusting the width of the inter-pupil there is a top right-and-left screw, which either expands or contracts the two discs. This is to enable the patient to see through the centre of the lens. Each eye is tested separately (while the other is covered by a shutter). The test-type, which is very small, is extended along on the bar, and the lenses rotated in the front of the eye until the type is seen with ease. The same process is gone through with the other eye. The board is Sneller's test-type and Carter's dial for testing astigmatism. The board is looked at six metres off where the visual angles converge. If not seen distinctly the lenses are rotated in the front of the eyes with great rapidity until such lens is produced that the patient can see with. Should the patient still be unable to see the line of type the dial is brought into use to see if the patient is astigmatic. The disc containing the cylindrical lenses is then fixed in front of the eye. All the lenses rotate on their own axes. They are called cylindrical, and the ordinary lenses spherical. The cylinders are segments of a cylinder and have the vision of one meridian only, and the spherical are segments of spheres and have their focal vision in the centre. The disc is rotated and set at such an angle as to enable the patient to see all the lines on Carter's dial perfectly and with equal clearness, and after the various defects have been noted, the centres of the patient's eyes are measured from pupil to pupil, and the degrees of astigmatism (if any), the size of the lens required, the height of its bridge, and its shape, so that they are made to fit comfortably, &c. Each lens is spun into a brass ring; the edge of the ring is fastened to an endless steel band, revolving round two pulleys; on the lower pulley is a bevelled wheel gearing into another wheel on a cross shaft. All the lenses are numbered by the dioptric system, and the instrument lends itself readily to the keeping of a methodical record of every case that comes under notice.



Huck's Patent Safety Mainspring Barrel.—3,399 is the patent number of a new safety going barrel for preventing damage to the other parts of a watch, consequent on the breaking of the mainspring. The barrel is in two parts, first of Barrel, second of Toothed Wheel, the barrel has a small projection on its underside passing through wheel, the wheel is secured to barrel by a rachet wheel screwed to barrel projection, the wheel has a recess for allowing rachet wheel and click to be level with face of wheel. The Click and Spring are fast to wheel, the rachet wheel is fast to barrel; when the barrel is placed on the watch and the mainspring wound up, the mainspring box is carried forward; the rachet wheel fixed to box engages click point and carries force forward through the train in the ordinary manner. When the mainspring breaks the mainspring box will recoil to left freely, leaving wheel in its ordinary place, in centre pinion, without the slightest strain on wheels or pivots, the box being at liberty to move through the rachet wheel on its underside. It will at once be seen that it is perfectly simple, effective and cheap. The ordinary star stop work can be fitted to arbor above barrel cover, the arbor passes through in the ordinary way. It is the invention of Mr. Gerard Huck, of St. James' Hall, Burnley, Lancashire, who is now offering it to the trade on terms of Royalty.

Sporting Novelties.—From the ages of stone-club and flint arrow-head it has been the custom of mankind to value and preserve as "Trophies of the Chase," the varied spoils of the animal world. The hoofs, horns, claws, teeth, or tusks of animals, are particularly suitable for preservation as trophies—as memorials of favourite animals that have been possessed and prized—as mementos of the hunt, or records of stirring incident and adventure. But the mere fact of saving these is comparatively useless; to be at all lasting and to show their full beauty, they require particularly skilful treatment, both as regards the preserving, and also the mounting into useful and ornamental articles; this treatment is beyond the knowledge of the ordinary silversmith and electro-plate manufacturer, years of experience and special training being required before competence is gained in this special trade. A representative of this journal called recently on the firm of Booth Brothers, 43, Northampton Street, Birmingham, and was courteously received by Mr. Edward Booth, who having successfully gone through this course of study, holding diplomas and certificates in all branches of science pertaining to it, gives his personal supervision to all the numerous novelties designed and manufactured by the firm. Our representative was very favourably impressed with the evident regard this establishment pays to the wants of customers in the smallest details, any special job entrusted into their hands receiving the most careful attention. As regards the articles produced and the designs used, they are innumerable. Horse-hoofs, cow-hoofs and horns can be mounted into the following different articles:—cruet-frame, liqueur-frame, lamp, candlestick, candelabra, clock, barometer, watchstand, inkstand and pen-rack, letter-clip, letter-weight, letter-scales, call-bell, cribbage-board, epergnes, match-holder, tobacco-jar, snuff-box, spill-cup, brandy-and-soda cruet, cigar holder and ash-tray, whip and gun rack, hat and stick rack, cups and trophies for prizes at agricultural, dairy and horse shows, trotting matches, horse races, &c., &c. Messrs. Booth have a special set of hoofs mounted appropriately for the furnishing of sporting club rooms, hotels, and also supply special drawings when desired. This is only one department we have space enough to notice; but the stuffing and mounting of fox, otter, deer, horse and rams' heads, dressing, curing and mounting skins, we must leave for some future occasion.

A novelty in the shape of a combined mechanical and electrical alarum clock is put upon the market by the enterprising firm, Messrs. Fattorini & Sons, of Bradford. Its form is shown in the accompanying cut. The clock is mounted on a handsome box which contains the battery, and the bell is rung by means of a "faller" making circuit. The advantages claimed for this clock are that it is the only electric alarum in the world which can be carried from one room to another with the same ease as carrying an ordinary alarum clock; it is self-contained, portable and requires no fixing of wires; it simply requires winding up and setting like an ordinary alarum. The continuous and loud ringing of the electric bell effectually prevents the possibility of any person oversleeping himself, the noise and continuity of the ringing in a few minutes terminates the soundest sleep. The bell or horn will continue in action until the person who requires awaking gets up and turns off the switch. In addition to the electric alarum the mechanical alarum goes off or sounds at the same time and with a double effect, and either or both can be used at pleasure. During the daytime the alarum will be found useful as a call bell, as the bell will ring every time the handle at the back is placed in contact with the timepiece.

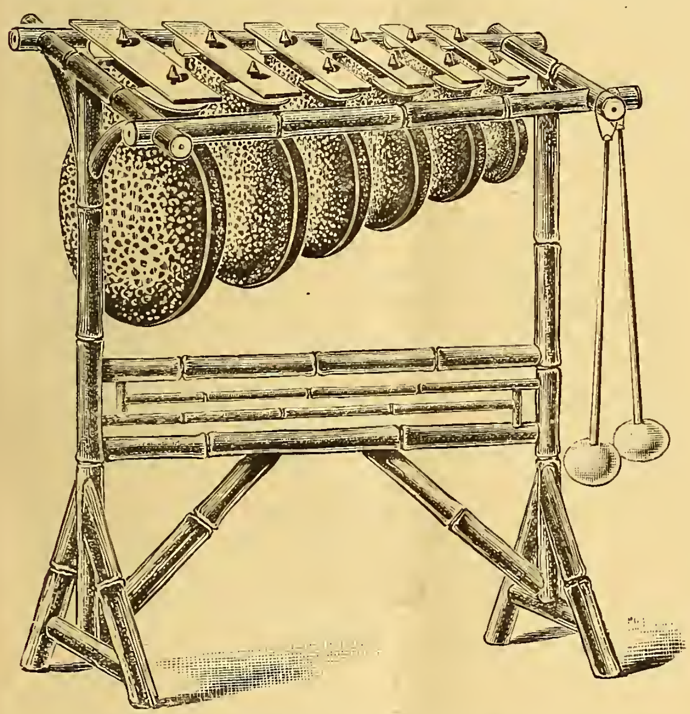


We have before us the new trade catalogue and price list of Messrs. John Round & Sons, Limited, of Tudor Works, Sheffield, which for comprehensiveness of scope and completeness of detail leaves nothing, we should imagine, to be done over again. From the elaborate sterling silver centre pieces and presentation spades, down to the humblest production of the electro-plater's art, everything is included in this artistic work (for though intended solely for a buyer's *vade mecum* and practical guide, such a production, which must have entailed an immense amount of thoughtful labour and expenditure, is surely entitled to the dignity of the title) and every illustration throughout the book has appended to it a clear description, a reference number and the price, singly, and by sets where necessary. The great variety in the designs of electro-plated ware renders it impossible to include everything even in the most complete catalogue of the kind, and in this respect a wise discrimination has been exercised in the compilation of the work under notice, which while giving specimens of all the standard goods of commerce, is fully up to date with the newest examples of the silversmiths' taste and ingenuity. The illustrations comprise sterling silver, electro-plated on nickel silver and Britannia metal, and Britannia-metal goods, and reference to various contents of the catalogue is facilitated by a copious index. An addendum, forming a separate catalogue, contains illustrations (drawn to scale) and prices of the large variety of handsome duplex and other lamps made by the firm, which is well worth the attention of all who stock these goods.

Messrs R. & W. Sorley, 1, Buchanan Street, Glasgow, have forwarded to us the following description of the caskets and key referred to in our Trade Notes for September. Both caskets are of gold. The city one has a view of the new Municipal Buildings from George Square in the centre in chased work, with small sketch on each side representing railway and shipping commerce. On the back is a view of the Glasgow Exhibition. On the one end is the College and on the other the University, while at each of the corners are modelled figures representing art, science, commerce and agriculture. On the lid above the buildings are the Glasgow arms, on the opposite side the Scottish Lion and Shield, with, on the top the Royal arms. The ornamentation on the lid is in high relief, in polished and dead or frosted gold. The casket will be in a case of green velvet—green being the customary colour for Glasgow Corporation presentations. The Renfrew casket is oblong, with sharp corners. In the top are the crown, sword and sceptre. The lid is flat chased and engraved work, surrounded by twelve Scottish pebbles. The sides are dead gold, with etched scrollwork. In centre are the Royal arms, with Stuart arms to the right, and the burgh of Renfrew arms to the left. On the back is the Blythswood testimonial, with old and new Town Halls on each side, and on the ends are the steam ferry and a large Atlantic liner. The subjects are all engraved on polished gold, and underneath these, in flat chased work or ornamentation, are a number of Scottish pebbles inlaid, these stones being cut carbuncle shape. This casket is lined with silk of the Royal Stuart tartan pattern, and the casket itself is to be in a red morocco covered case. The entire ornamentation is pure Celtic. The key to be presented on the occasion of the inauguration of the new Municipal Buildings has also been made by Messrs. Sorley. Designed by Mr. William Young, architect of the buildings, the key is of 22-carat solid gold, hall-marked, and, like the casket, will be in a case of green velvet.

Among the numerous presentations made to the Earl and Countess Fitzwilliam in celebration of their golden wedding, September 10, 1888, not the least interesting is that from the miners and workpeople employed at the Fitzwilliam Collieries, Elsecar and Low Stubbin. This consists of an illuminated address, with a beautiful illuminated album, containing 1000 signatures of the subscribers, and a Norman cross, carved in oak, which reproduces the form of the ancient Sprotborough cross. The illuminated address is a very handsome and artistic piece of workmanship. The body of the address is inscribed in old English Text, and above it are emblazoned the Fitzwilliam arms. The whole is enclosed in an elaborate and tasteful floral border, of modern design. At the top, and at the two sides, are vignettes, in sepia, one containing a view of Wentworth House, one a representation of the Norman cross, and the third a trophy of miner's tools. The address is placed in a handsome gilt frame, with the Fitzwilliam arms carved to form a centrepiece. The illuminated album is also a work of art. On the first page is a photograph of the framed and illuminated address; the second page bears an inscription recording the gift and its occasion; the names fill eleven pages, with a view of the collieries. The album is handsomely bound in cream morocco, with ornamental pierced gold corners and clasp, and a centrepiece engraved with the Fitzwilliam arms. It is enclosed in a morocco case with a lock, with gold mountings. The decorations of the address and album were designed and executed by Mr. R. C. Honey, of the firm of Parker and Honey, law-stationers, bookbinders, and lithographers, Bank Street, Sheffield. The carved-oak reproduction of the ancient Norman cross was executed by Messrs. Thornhill and Co., New Bond Street, London.

Resonating Gongs.—For the first time, we believe, in the history of the Birmingham Musical Festival, a new musical instrument—the invention of a Birmingham man—was introduced into the orchestra. The newspapers have already announced that these new Resonating Gongs will be introduced by Dr. Bridge in his new Cantata, "Callirhoe." It will be remembered that these Gongs were exhibited by Messrs. T. Wilkinson & Sons, of Pelican Works, at the Exhibition in Bingley Hall, during the visit of the British Association to the Midland Metropolis in 1886, and attracted probably more attention than anything else in the show, the result being a large demand for the new invention, principally in the form of Table and Dinner Gongs, Carillons, and Octaves for tune-playing, &c. It was obvious, however, from the opinions of competent judges that the new Gongs were destined to fill a place in the musical world. Eminent musicians and organists all over the country were unanimous in praise of the quality of the newly-developed sounds. Mr. Nasmyth, the inventor, Professor Grubb, of the Dublin Observatory, Swann, the Electrician, and other scientists gave unsolicited testimony as to the beauty of the sounds of the new invention, and it was not long before Sir Arthur Sullivan himself sent an order for a large A-Flat Gong to do duty in his then new opera. A large and very valuable tuning fork of the desired pitch accompanied the order. We believe it was the effect of this gong in the opera referred to which decided Dr. Bridge to introduce them on an extended scale in "Callirhoe." It is only fair to state that the invention's birth-place was the Birmingham and Midland Institute, and that the inventor, Mr. Edmund Perry, was a student of the Institution. It was during the 1880 term when Mr. Perry was attending a course of lectures in acoustics that he first conceived the idea of combining sonorous plates of metal with resonators. The class experiment which led him directly to the discovery was that of applying a vibrating tuning-fork to a column of air, and it is not a little remarkable that the same experiment had been performed in class-work hundreds, probably thousands of times by Mr. Woodward, the principal, before it was applied to song sounds. It was three years, however, before anyone joined Mr. Perry in securing a patent. Mr. R. Plant, the mechanician, was really—next to the inventor—the first man to see the value of the invention, and a patent was taken out in their joint names. It was not, however, fully developed until it came into the hands of Messrs. T. Wilkinson & Sons, of the Pelican Works, who became sole manufacturers in 1886, and by whose exertions the Gongs have been introduced to the public. They soon developed the patent by bringing to bear upon it their many facilities for manufacture, and thus in place of the cast-iron Gong—as was at first necessary—they produced them in fine-art metal work, tastily mounted and decorated on Stands of Oak, Bamboo or Metal Work. As Gongs, they have been highly appreciated, and a large demand has sprung up for them. The musical tone, however, which for sweetness is unsurpassed, indicates that the future success of this invention will probably be in the Orchestra, and also as a Piano in the homes of many of our music-loving population.



International Exhibition, Glasgow, 1888.

By Alexander J. S. Brook.

Final Notice.

In the main and transverse avenues of the Exhibition have been placed the exhibits of the Jewellers and kindred trades. Their number is certainly by no means excessive—but we do not complain of that, for in some exhibitions, the larger the number, the more monotonous is the general effect—but it is comprehensive, more so than we recollect having seen in any exhibition of recent years. It appeals to all classes—to the ordinary tourist as much as to the jeweller.

We commenced our inspection at the exhibit of the Diamond Cutting Company, of London. The history of diamond cutting is one which occasions much reflection, and that has given rise to many a regret. In the manias for persecution that have swept over most European countries in recent centuries, many an unforeseen result has ensued. More frequently than otherwise—as for instance in the Huguenot persecution—England has been the country that benefitted by it, but in the diamond cutting she was the sufferer. That this trade should have been in the hands of the Jews is a matter of little surprise, for all trade connected with gems seems to be indigenous to the Hebrew race; but it certainly is remarkable that a country like Holland, and a comparatively unimportant city like Amsterdam should have acquired and retained this trade for so many years. More than two hundred years ago it held an important place in England. The workmen employed were nearly all of Jewish origin. Religious intolerance and imprudent taxation drove them out of this country, when they sought a refuge in Holland and succeeded in establishing themselves there on a sound and firm basis.

Up till 1871 few diamonds were cut in London. The Koh-i-noor certainly was cut there, but it was by workmen brought specially over from Holland for the purpose. A few Dutchmen were induced in 1871 to come across by the prospect of high wages and a commencement was made in attempting to re-establish this industry in London. The history of the enterprise is interesting. They struck and struck again for higher and still higher wages. At length the limit of a patience, begat of a desire to learn, in spite of all obstacles and difficulties, was reached. They were told they might go, and they went. Meanwhile their masters had endeavoured, notwithstanding the Dutchmen's strenuous efforts to preserve the secret, to acquire some knowledge of the art. Immediately on their departure English lapidaries accustomed to the cutting of coloured gems were selected to develop the enterprise and by dint of patience they succeeded. They found they could cut a diamond, although the time required was three or four times that occupied by the Dutchmen. After this the matter was comparatively easy, and the Diamond Cutting Company has now set themselves in earnest to the task of trying to turn back the course of the stream which two centuries ago the stupidity and intolerance of our ancestors diverted from us.

To a jeweller, a chat with the workmen at this stand which may be seen any day in full operation is exceedingly interesting. Among other things we asked them if it was possible—without ascertaining the specific gravity—to tell a Cape stone from a Brazilian one. They at once assured us that it was, and added that the paste which polished the one would not touch the other.

The re-introduction of this industry opens up many questions—among them, that of the employment of female labour which seems to be such a drug in the market. It appears to us that this is a field eminently suited for such labour. Nothing that is beyond a woman's capacity is required for the general diamond cutter, and it will not surprise us to see female labour largely introduced in the future in this industry. At the same stand there are also to be seen jewellers working, and there is exhibited besides, a very fine and varied assortment of mounted gem work: so that within the compass of this exhibit alone the main features of our trade are displayed, and that in a manner and within a space that it would be impossible to see them in the ordinary trade workshops.

Proceeding down the main building of the exhibition, at its junction with the transverse avenue we come across the Goldsmiths' corner. A general look round convinces us of one fact, that the Glasgow instinct for trade has affected not only the exhibitors from that city, but also the strangers from afar, and that they are all there to drive a trade as well as to exhibit. In saying this we touch upon one of the exhibition grievances. We fancy all exhibitions are more or less the same in having grievances, and we imagine that their origin, development and management must afford a cynical pleasure, and furnish a curious psychological study to the manager and other paid officials who have seen many exhibitions and passed through many similar experiences.

Originally we believe it was understood that there was to be "no selling": then crept in the proviso "without special permission." That there is selling, whether with or without permission is an undoubted fact, for it was recently stated that including automatic machines there were 318 places in the exhibition where goods could be purchased. That the jewellers have laid themselves out for it is equally apparent. Each one is more or less a small self-contained shop fitted up with counter and show cases, and equipped with every facility for doing as much business as possible, and we understand that most of them have the necessary permission to sell. In this respect they are fortunate, for the exhibition authorities are now proceeding against those who are violating the regulation, and on September 14 they obtained in the Sheriff Court, at Glasgow, an interdict against a dealer in Japanese goods, preventing him selling hereafter within the exhibition.

The most prominent position has been assigned to Messrs. George Edward & Sons, 94, Buchanan Street, Glasgow, and it may be said that their exhibit is worthy of the site. It comprises a large and valuable selection of diamond, pearl and gem jewellery, Scotch jewellery of all kinds, and silver plate of every description. They also display a large quantity of presentation plate which they have manufactured at different times. A few of these articles may be mentioned. Among them we noticed the Sword of Honour presented to Sir Archibald Alison, Bart., K.C.B.; the gold casket presented along with the Freedom of the city of London to H. M. Stanley; a silver casket of a sporting design presented to Captain Gilmour of Montvave; the silver cradle presented to Lord Mayor Fowler by the citizens of London; the silver bowl presented by the Queen to the Royal Northern Yacht Club; the casket presented by the Corporation of London to the late Earl of Shaftesbury; the key presented to the Earl of Rosebery on opening the Elder Park, Govan; and the silver gilt casket presented to the Prince of Wales on opening the exhibition. They show other presentation pieces of plate, but as the mere mention of them without an intelligible description would be of little interest we may pass them over.

In the way of novelty one tea-set may be specially mentioned, which, although incongruous in design, possesses considerable merit. In form and decoration it is Japanese or grotesque in style, but the main feature of it is a set of scenes from the Waverley Novels, from illustrations by Sir John Gilbert. Such incongruity it will be observed is often to be met with in the Indian section, where European forms and oriental decoration are combined. In the present instance it is by no means displeasing and the work is most excellent.

Among the other exhibits of this firm is a remarkably fine display of clocks. Among them is a clock of all nations, with thirteen dials, showing the time simultaneously at Sydney, Madrid, New York, Canton, Calcutta, Paris, St. Petersburg, Constantinople, and other places. There is now also on view the casket presented to the Queen on her Majesty's recent visit, as well as the portfolio presented by St. Margaret's College.

Immediately adjoining this exhibit is that of Messrs. Elkington & Co. In point of size it seems to be even larger than its neighbour. We approached it with interest and expectant pleasure, for the name of Elkington has been one to conjure with in the past, and their efforts have been powerful toward the object—originally the primitive one in all trade—of bringing the producer and the consumer—the manufacturer and the public—together. (For this no doubt many do not thank them.) Their name has been a household one for years, and the pseudonym for quality. They have employed the best artistic talent obtainable anywhere, and whenever we contemplated—what may indeed be but a dream—the establishment of an English School of Art Plate, it is to them our thoughts have turned. In their exhibit in Glasgow we look for something that would point to such a result. We search, but we find it not.

They show, however, reproductions and, in some instances, the originals of some of their triumphs in the silversmith's art: the International Trophy; The Goodwood Cup for 1881; a hunting horn, supported by a bounding stag, which is worthy of prolonged examination: also electrotypes of the famous Milton and Bunyan Shields.

They have specimens of all styles, from the antique to the naturalistic. Consequently we have side by side works of the most beautiful and the most unseemly character—the most charming and the most incongruous.

Some beautiful specimens of damascened work in the form of caskets and many exquisitely chased plaques form some of the more interesting portions of their exhibit. Besides these of course there are the more usual and what might be called the more commonplace articles of a silversmith's exhibit—tea-sets, trays, bowls, &c., the number and variety of which preclude separate mention.

Next to this stall is placed the steel cage of Messrs. Chubb & Sons, of London. In it are displayed the finest unset gems in the whole exhibition. Among them we noticed a large black Brazilian diamond, which weighed originally 50½ carats. On cutting it was found to be intensely hard. It weighs now 16¾ carats. One of its peculiarities is, that on being rubbed for a a few moments and displayed in the dark, it gives forth most brilliant flashes. Our curiosity regarding this phenomenon is so whetted, that we regret that no opportunity is afforded for seeing this peculiarity. There is also a magnificent golden brown diamond, which is considered matchless. Its pronounced colour is thrown into prominence by being surrounded by fine white brilliants. We may further add that it is a specimen of English cutting. Specimens of rough Brazilian diamonds, and also of rough, white and yellow diamonds from New South Wales, are also shown. The latest of the large diamonds discovered in the Madras Presidency is notable. It is a unique stone, and when its cutting is completed it is said it will be worth over £2,000. All these gems are exhibited by the Diamond Cutting Company. As a place of safety a cage may be a most desirable showcase, but we feel that if the safety of those diamonds from burglarious hands could be otherwise assured, we would much like a closer view of them.

Behind the cage is the exhibit of the now well-known engraver and jeweller, Mr. David Macgregor, George Street, Perth. It is as an engraver, perhaps, more than as a jeweller or silversmith, that he is famous. It is impossible without an inspection to conceive what the graver in his hands can accomplish. The term "Portraits in Gold and Silver" conveys but the faintest idea of the beauty and delicacy of his work; and portraits from his atelier possess the qualification unobtainable in those of his *confrères* who work in oil and water colour, that they are impervious to damp or light or atmospheric conditions. They are portable, however, for he engraves many on watch covers and card cases. Among his most recent works are "The Odalisque," after Sir Frederick Leighton; H.M. the Queen, and the late Principal Tulloch. As a feat in engraving he shows (what attracts considerable attention from tourists) the Lord's Prayer engraved on the third of a threepenny-piece. We may add that it is so clearly and regularly cut that it can be easily read with the naked eye. Besides his speciality there are many novelties at the stall; some fine designs in Scotch jewellery, and some quaintly-mounted horn spoons and napkin rings.

At the stand of John J. Royle, 27, King Street, West, Manchester, is shown one of the novelties in this section of the exhibition—the self-pouring teapot. The difficulties of obtaining a cool handle and the risks and trouble of lifting a full teapot are done away with by a most ingenious contrivance. The spout is carried to the bottom and the strainer lies flat. Through the button there passes an air hole. When the cylinder is raised and the air hole closed with the finger, the tea emerges from the spout as long as the downward pressure is maintained. The contrivance is simple and works most satisfactorily. It has the advantage moreover of enabling one to use a much larger teapot than could otherwise be comfortably handled.

The Glasgow manufacturers are represented by Messrs. Thomas Smith & Son, 31, Queen Street. They show several pieces of presentation plate of their own make. There are two caskets—one of them presented to Sir John Stirling Maxwell on attaining his majority, and the other presented to Bailie Simons, the first Jew who attained the position of a magistrate of Glasgow. There is also the spade used by Sir James King to cut the first sod of the exhibition. They have, moreover, an all-round display of silver and electro-plated goods, many of them of new design and got up specially for the exhibition, and much above the average run of such goods. Among their novelties are many excellent designs in teaspoons, of which, it is strange to say, they sell many single specimens to Americans, who have a partiality for making a collection of such articles.

Sheffield is represented by Messrs. Walker & Hall, who also showed at Manchester, with a large and imposing display of silver and electro-plate goods which at once attracts the eye as the visitor goes in at the main entrance of the exhibition.

An exhibition in Scotland without some distinctly national exhibits would be an anomaly, but this is averted by the display of Messrs. R. & H. B. Kirkwood, Thistle Street, Edinburgh; a case of Highland ornaments of similar character and design to that which attracted so much attention in the Edinburgh Exhibition. The officers' ornaments and badges of most of the Highland regiments are arranged in the lower portion of the case. We rather fancy from their gorgeous appearance that our officers must be worth the plundering if they go forth on a campaign thus equipped. The crest brooches of the Highland clans, fac-similes of some of the famous historic brooches shown in the Bishop's Castle collection, and a unique display of sporrans, dirks and belt furniture—most of it reproductions of fine old designs—go to make up an exhibit unsurpassed in its own line in the whole exhibition. Messrs. Leckie, Graham & Co., Glasgow, and Mr. Andrew McFarlane Kengussie, have each an exhibit of a similar character.

We turn now to the Indian section. In itself this is an exhibition—worthy indeed of a special notice—interesting to the most casual observer, and positively fascinating to the student of Art Metal Work. It comprises both a loan collection and exhibits for sale. As is usually the case, the former, although less in size, is much finer in the quality of the specimens exhibited. Many of the articles are antique, and it is an undoubted fact that the modern Indian work, like that of Europe, does not equal the antique. Fine work demands time, and indeed the consecration of a life, and in India they are beginning to appreciate the value of time, and the man that a generation ago was glad to get a few annas a day, now readily obtains two rupees.

Among the most important exhibits is a Burmese silver centrepiece in *repoussé* work. The upper portion is in the form of a vase, with a Cathay horseman for the knob on the cover. The lid is surrounded by mythological figures in relief and scroll work. The body shows in six circular panels, the scenes in Nat (or genii) existence in connection with royal personages on earth. The two handles very gracefully represent flying Nat thamyees or daughters of Gyunyaha. The basement is unique; it consists of four elephants' heads with uplifted trunks, who are again upheld by Beloos and Beloomahs. On the lower pedestal stand four princes and princesses in dramatic postures. The effect of this centrepiece is striking beyond description, and gives one quite a different impression of the capabilities of the Indian silversmiths and designers.

Not less striking is the appearance of a "Tswan Oke," or bowl, about 32 inches high standing close beside it. On the pedestal and the bowl is executed a series of scenes which taken together are nothing less than a pictorial novelette of rather a sensational character, in silver *repoussé* work. On the pedestal are ten scenes which describe how Padasaree, the daughter of a wealthy man, fell in love with her man-servant and eloped with him from her guardian's house to the jungle. Fortune smiled upon her and she became the mother of two children. Their life in the jungle, although happy, was one of considerable hardship, and her husband had to labour hard to provide even the necessaries they required. Suddenly misfortune descended upon them—the husband died, having been bitten by a snake. Then Padasaree with her two children sadly retraced her steps to her former home. Again misfortune overtook her, for she loses both her children at one time, the one being drowned while crossing a river and the other carried away by a bird of prey. Her reason then becomes unhinged with these repeated afflictions and meeting a god she worshipped him as he approached her. But the dénouement must sound strange to the European novel reader, for the novelette ends with the said Padasaree enquiring of an old woman the whereabouts of her parent.

Not less interesting are the scenes on the bowl, in which Beloos are transformed into deer, and soldiers into priests, nor is the end less peculiar, but space precludes our going into details.

There are many other charming and attractive pieces of plate in this loan collection. Among them are several exquisitely chased bowls, which the Burmese use in making offerings of fruit and flowers at pagodas or on visits of ceremony. There is also a silver teapot of Burmese design which at once attracts attention. The knob on the lid is a demon beast; the handle is a haga—a fabulous dragon-snake; the spout is a phœnix's head and neck, round the foot are a number of theatrical performers. Silver filigree cups, water bowls, rose-water bottles and some magnificently carved ivory tusks are also notable in this collection.

The exhibits for sale are exceedingly numerous, and fill several courts of the exhibition. On a ticket attached to each article is stated the name of the article—in some cases a most necessary proceeding, although being in Indian it is very often unintelligible—the place it was made, the price and the name of the maker. We were pleased to observe that many of them were marked with the red label, indicating that they were sold. On a cursory examination there appears a striking similarity of character and design in all Indian work; but a more careful inspection reveals easily distinguishable characteristics in the classes of work emanating from the different districts of India. Centralisation is however increasing there, and we were assured that nearly all the different classes of workmen may now be found in Bombay, and that work of any character can be there produced. There are several classes of work with which all of us must be tolerably familiar. The Kutch silver plate is richly embossed throughout with floral patterns. Into the Swami work again are introduced incidents from Buddhist mythology, interwoven with flowers and scroll work. Illustrations of royal courtship assisted or frustrated by the good or evil nats, and some curiously formed accessories in the shape of fabulous animals and birds, form a prominent feature in this class of work. The delicate beauty of the Kashmir work is well known. Here we find the outlines as a rule simple and graceful, while the effect is produced by delicate gold tracery on a silver ground. Into the Moradabad work, green and red enamel is introduced with good effect. In some respects the Tanjore work is an imitation of the Kashmir, but instead of gold and silver, there is copper and silver treated in much the same manner. The fine rich effect of damascening is produced in Biddry and Sialkat work. In the former, iron and silver are employed, while in the latter, which is much the finer steel, silver and gold are used. Into Agra work coloured stones are introduced. Benares chased brass work is so well known in this country as to need no description. We also observed that imitations of many of these different classes of plate are cleverly produced in papier-maché. The forms of numbers of the articles are unique, a strange mixture of the grotesque, the mythological and the practical. Some of the betel boxes are exceedingly beautiful, and much care seemed to be lavished upon water jars of which there are numerous specimens, and even such unimportant articles as spittoons.

In the jewellery there are also distinctions: that emanating from Delhi is floral, while in that from Trichinopoli the mythological element is introduced. Jeypore and Mooltan work is enamelled. One of the most apparent features is the weight and purity of the metal used. The hoarding propensities of the Indians doubtless render this desirable, for instead of banking or otherwise disposing of their money, they invest it in jewellery, and the question of intrinsic value in that case is of more importance than that of fashion.

The practical element is also shown in a series of workshops in which the natives may be seen plying their respective crafts. Very dignified and quaint they seemed to us to be, as contrasted with their English *confrères* in other parts of the exhibition, and very leisurely and deliberate in their movements. We feel we cannot do justice to this section in such a cursory article as this must necessarily be, but if we have aroused an interest in our Oriental fellow-craftsmen and induced some to go and examine their work for themselves, our purpose is served.

Birmingham News.

From Our Correspondent.

ALTHOUGH the fancy trades here remain somewhat unsteady and makers complain of having to be constantly producing new patterns in order to effect sales, there is still a hopeful tone prevailing, and I think a fair winter trade will be the result; there is rather too great an amount of gossip more or less always circulating of a somewhat injurious character, which goes a great way towards spoiling credit, and even forcing houses into bankruptcy that would perhaps pull through otherwise. Manufacturers, and especially their travellers, would do well to check this—it is a growing evil, and like the complaints of "bad trade," is liable to increase with practice.

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A glance through the programme of the Birmingham School of Art for the opening Session 1888-89, shows very clearly that the Art education of the masses is not going to be neglected, nor is there wanting plenty of encouragement to pupils in the way of prizes. The Prize scheme containing offers of 12 gold medals, 30 silver medals, 60 bronze medals; each medal carries with it a book prize, and in addition to these there are 70 money prizes, varying from 7s. 6d. to £2 each, offered for various subjects, most of them designing in various branches; also a number of Scholarships, and several special prizes offered by Art manufacturers in Birmingham, the whole forming a scheme that should attract the attention of all the young folks in the fancy trades of the town. The Jewellers' classes are not yet in the programme as the arrangements are at present incomplete; it is to be hoped that the managers, in arranging these special classes, will bear in mind the fact that it is highly important that the masters selected should be practical jewellers, and as there are several such holding Art Teachers' Certificates under the department, there ought to be no difficulty in the matter.

* * *

Makers of gold studs, links, &c., report a good number of orders on their books, but complain of the long credit; one maker, who has just recently made a bad debt of £250, assures me that there are only £9 of it which are this year's sales.

* * *

There appears to be a considerable rush among the silversmiths and electro-plate makers for pepper boxes; it is somewhat unaccountable that this special article of the cruet should be in demand unless the faculty have recommended oysters as a specific against all the "evils flesh is heir to" for the coming season; they do go mad occasionally upon some special article of diet.

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Some of the bracelet makers report good business during the last month in a cheap class of goods, one house in particular finding it necessary to increase their number of hands. There are some strong signs of bracelets becoming more general for wear than they have been of late years.

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Precious stone dealers complain of the prices they are getting for most classes of goods, and although the sales are fairly numerous, the small profits will not compensate for the numerous bad debts that are constantly occurring of late. One of our leading dealers expresses his opinion that it would be good for all concerned if creditors could send the Sheriff's officers round with the van and take possession the same as the landlord does for his rent. This is perhaps scarcely practicable, but there is certainly room for some salutary reform in the present arrangements.

* * *

The Birmingham Triennial Musical Festival is generally expected to bring some extra business to the town, and no doubt it does prove the means of circulating some extra cash among the shopkeepers of various classes; this year it has proved the means of bringing into notoriety the new production of one of our leading manufacturers in metal and electro-plate, *viz.*, the new musical gongs by Messrs. T. Wilkinson & Sons, of the Pelican Works, Great Hampton Street. As these gongs are made in a variety of sizes and mounted in various ways suitable for household purposes, wholesale buyers will do well to give Messrs. Wilkinson a call and inspect their patterns.

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The firm of Messrs. Downing Bros., Spencer Street, manufacturing silversmiths, is now under the title of Mr. Arthur Downing, goldsmith, and is, I believe, amalgamated with that of Mr. Arthur Downing, Hockley Street, Birmingham.

The Empress Josephine's Ring.—H. R. Balding, a jeweller, of Sidney Street, Gray's Inn Road, was charged last month, at Bow Street, with illegally pawning a diamond ring belonging to Mr. Harcourt Smith. Mr. Crispe, barrister, prosecuted, and called evidence to show that the ring had been entrusted to the defendant to sell. The prosecutor alleged that the ring belonged to the Empress Josephine, and was of the value of £150. In cross-examination by Mr. Vaughan, however, he admitted that he had purchased it for £16. The ring was pawned by the defendant for £10. Mr. Vaughan, for the defence, called evidence to show that defendant was a highly respectable tradesman, and it was suggested that the ring had been entrusted to him absolutely to realise what he could. After hearing the evidence, Mr. Bridge discharged the defendant on payment of the amount he had realised on the ring.

Sheffield Notes.

On the Saturday following the Cutlers' Feast at Sheffield last month, the Master Cutler, Mr. S. Earnshaw Howell, was presented by his workpeople with a dessert service in sterling silver, manufactured by Messrs. Walker & Hall, of the Electro Works, Howard Street, Sheffield. It forms a centre piece and four side fruit stands, which are similar in design. The centre stand consists of a rich dish of oblong pattern, made of English cut crystal glass, the corners rounded and ornamented to a gondola shape; it is secured in a frame decorated in relief with a Grecian pattern, the latter being supported by four grandly modelled sphinxes in silver gilt. The sphinxes, placed at the corners, repose on a base heraldic in form, resting on four claw feet exquisitely modelled and tastefully adorned. The base is in dead silver, and, beyond the Greek pattern round the edge, the only ornament is the crest of Mr. Howell and the inscription. The smaller stands are similar, excepting that the fruit dishes are square instead of oblong. The dessert service is an exceptionally good example of the silver craft. The Mistress Cutler was at the same time presented with a magnificent bracelet.

In addition to the Master Cutler's gift, two other examples of silver, locally produced, call for mention. The "Bingham Challenge Shield," by the same firm, is the gift of Lieutenant-Col. J. E. Bingham, of the Sheffield Engineers, to encourage rifle shooting. It is valued at £250, is circular in form, and 6 ft. 10 in. in circumference, the border being a cleverly-chased laurel wreath of oxidised silver; the second circle is a broad band of exquisitely cast and chased scroll work resting on a dead silver ground; and the third is made of a number of heraldic shields, with the arms of each volunteer regiment enamelled in colours, each illuminated shield being linked by small enriched gilt studs to a bright silver shield of similar shape, left plain for inscribing the names of the various corps fortunate enough to win the prizes. The centre of the shield consists of a magnificently-modelled lion's head of oxidised silver, surrounded with a circular scroll, upon which is raised, in gilt block letters, the words, "The Bingham Challenge Shield." There is much more elaborate work, in the way of illustrating military duty, with the emblems of the United Kingdom. The shield is mounted on a frame covered with rich maroon velvet, and is fixed to the frame by four solid silver bolts, the large heads of which are ornamented with engravings of York, Leeds, Sheffield and Bradford, the four principal places in Yorkshire. The 3rd Battalion West Yorkshire Regiment, known as the Leeds Rifles, are the first winners. Another noteworthy specimen of silver work is a statuette of Earl Fitzwilliam, in his colonel's uniform, presented to his lordship on the occasion of his golden wedding by the officers of the 1st West Yorkshire Yeomanry Cavalry, which he commanded till 1886. His lordship is wearing the aigulet as aide-de-camp to the Queen, and also the ribbon and star of the Order of the Garter, the badges denoting the rank of colonel being on the shoulder knot. He is mounted on a favourite horse, The Owl, which was modelled from life, being sent from Wentworth for the purpose to Messrs. James Dixon & Sons, Sheffield, the designers and manufacturers. The statuette is placed on an ebony plinth, the entire height being 24 inches. The modelling of the earl and his horse is remarkably fine.

In hardware and cutlery there is a distinct improvement. Last August the value exported was £260,916; for August, of 1887, £243,433. For the eight months of 1888, £2,044,357; for the eight months of 1887, £1,850,540. The increasing markets were Russia, Holland, France, Chili, Brazil, British Possessions in South Africa, British East Indies, and Australasia. The decreasing markets are Sweden and Norway, Germany, Belgium, Spain and Canaries, the United States, Foreign West Indies, and Argentine Republic.

The Electrical Distribution of Time.

By Allan D. Brown, Commander, U.S. Navy, Assistant Superintendent of the Naval Observatory, Washington.

A Lecture delivered before the Franklin Institute.

(Continued from page 51.)

There are undoubtedly some of these clocks that are better than others; one of the latest is that of Spellier of this city; it would seem that in this plan a good many of the mechanical and electrical difficulties which surround the problem have been attacked with a reasonable degree of success; but you will observe in the specimen which is here shown, first, that the master clock is not of a first-class character, being very likely to be affected in its rate by all sorts of influences, and further, that it is not in connection with any source whence the standard time is derived. It is true that the time can be obtained from the telegraph office as it is sent from Washington, and the clock then set to correspond; but that is a method which requires too much time and attention; secondly, you will notice that the secondary clock moves but once a minute; that is to say, that it is correct just once in sixty seconds (when I say correct, I mean in accord with the master clock), so that it is impossible to tell what time it is to within nearly a minute; for instance, when the hands of the secondary point to five minutes past nine, the other clock may be at five minutes and fifty-nine seconds past; this may be considered sufficiently correct, but if a man was in haste to catch a train he might be easily deceived by thinking that he had nearly a minute more than was really the case. The seconds hand has evidently been abandoned by the inventor of this system, as there is much less expenditure of battery power and certain mechanical difficulties are avoided. There are electrical difficulties also in the way of running a very large number of these clocks on one circuit.

For the reasons that have been cited above, the idea of sympathetic, has been abandoned by those experienced in their workings, for that of synchronised clocks. The system of Barraud and Lund, in use in London, has already been described. Even that, however, is hardly applicable to our own country, where it is not always possible to receive even a daily signal, for in London it has been found best to correct these clocks hourly.

It may be assumed as the result of many years' experience, (1) that electricity is the most suitable power for controlling clocks at a distance from a central standard, since it is the only available force which acts with sufficient quickness to avoid delay and ensure accuracy; (2) that it must be used as a setting or controlling, and not as a motive power, inasmuch as sooner or later failures in the connections or breaks in the wires stop the clocks, and hence cause confusion to all who look to them for time; (3) that the cost of maintenance must be reduced to the lowest point, and for this purpose the wires must be in use as short a time as possible, and the least amount of force necessary to set the clocks right must be applied to the secondaries; this also involves the reduction of the amount of attention necessary to be paid to each clock to the lowest possible point; (4) that the system must be such that clocks of differing patterns can readily be included in the circuit, and that the correcting mechanism can easily be applied to them. The system used in London fulfils these functions quite well within its limits; but it has its disadvantages in that its power of correction is limited to the minute hand only, and that for an error not exceeding two minutes. This system has been used at the Naval Observatory at Washington (as have others also), but none have been found to fully cover the requirements of the case until the adoption of the one now in use; this is the Gardner system, by which the correction is made to both seconds, minute and hour hands, and in which there is no limit to the number of minutes that can be corrected, an error of twenty-five minutes being overcome as easily as one of twenty-five seconds!

The clock shown here is one such as we use in the observatory, and on our clock line running to the various public buildings. One of the points of the 8 pt. repeater mentioned above, is connected with this line; where in air it is an insulated wire; elsewhere it is in the Waring cable. There are over eight miles in the circuit, and upon it more than 350 clocks. In each building entered by the line there is, of course, a local circuit, upon which as large a number of clocks as 100 are worked. There is no complaint as to the working of the system. During the three-and-a-half years that it has been in operation all our trouble has been upon the line: the clocks themselves and the correcting apparatus give us no anxiety. Now, it is quite plain that these line troubles would have caused a system of sympathetic clocks to have ceased operations entirely, while in this plan the clocks have gone on running, and as soon as the line has been repaired, by the simple turning of the proper switches, the clocks have been corrected to coincide with the observatory standard. The Pension Office has seventy-five of these clocks, and quite recently the Patent Office (abandoning all others) has put in some 140. There are clocks of this pattern also in use at Newport, Hampton Roads and Savannah, giving, so far as I know, perfect satisfaction, and wherever the observatory signal goes they can be used.

I had finished writing the foregoing remarks and felt that I appreciated, to some degree at least, the necessity that exists for exactness of time, when this cutting from the *New York World* of January 1st, was handed me. I will not weary you by reading it at length; suffice it to say that it discloses a most lamentable state of affairs existing in the public clocks of the great metropolis. The writer states that there is just one place where accurate time can be obtained; and that is from the time ball on the Western Union building, to see which drop hundreds of people assemble on every week day, hardly appreciating, probably, that the signal which drops the ball comes from the Observatory clock, over 200 miles away. When, however, one goes up Broadway and attempts to compare his watch with the various clocks that are to be seen, he will have, as the reporter says, "an interesting time." No two of them are alike; and often the different faces of the same clock are discordant. Even the clocks in front of the great jewellery establishments are rarely correct, though they are very imposing, in more senses than one. Here are some illustrations of the way in which New Yorkers are treated in this matter. The clock at the corner of Broadway and Twenty-first Street at noon showed twenty-five minutes past one! The one on the next block was a little nearer correct, showing but four minutes after twelve. The worst specimen of all was the one in the Fifth Avenue Hotel, which, at high noon, informed the guests of that establishment that the hour was twenty-five minutes past ten! Well may it be said that reform in this matter is imperatively necessary!

Now that we have the system of standard time in use, an observatory must necessarily be the source of this time, and it becomes more than ever important that communication with well-established institutions of this sort should be regular and constant. There should be no such state of affairs as has been shown to exist in New York, nor is there any necessity therefor. The observatory at Washington was established on account of the needs of the navy for an accurate standard of time, and following the example of other Government institutions, it naturally gives to commerce its assistance when needed. The time balls already alluded to are but the beginning of what it is hoped will be a comprehensive system embracing the whole coast, so that in every commercial city there shall be a like installation. All that is wanted is an appropriation of the money that has been asked for, and which it is to be hoped will be granted. Nor is this the only function of the observatory, as has been shown already in the statement of the extent to which its time signals are distributed. Its system is the result of much study and experiment, and is believed to be fully suited to the needs of the community which it can serve, scattered as it is over such wide extent of country, and necessitating such long-distance transmission of the signals.

Design in Art Workmanship.

ART SCHOOL OF THE BIRMINGHAM JEWELLERS' AND SILVERSMITHS' ASSOCIATION.

At the Prize Distribution of the Birmingham School of Art, held at the Midland Institute, on the 13th ult., Mr. Alderman Kenrick, M.P., delivered an important address on the above subject, and on the development of the classes held under the auspices of the association. Continuing his more general remarks, he said:—In May last the committee received a communication from the Birmingham Jewellers' and Silversmiths' Association, in which the Association proposed that the School of Art should open a class or classes for the instruction of youths between twelve and twenty years of age engaged in the jewellery and silversmith's trades. One condition of the proposal was that the classes should be carried on in separate rooms by distinguished head masters, and with a definite line of study, preparatory to the practice of artistic design suited to the trades mentioned. The fees were to be paid half by the Association and half by the employers, and the Association guaranteed at fewest forty students. The committee gladly recognise the the willingness of these manufacturers to make a connection between their trades and the School of Art closer than any which had subsisted in the past. It had been one of the chief discouragements of the committee that they had hitherto failed to enlist in the way they desired to do the attention of the art industries of the town: and one of the principal justifications of the Town Council in establishing that school had always been stated as the fact that its operation on those industries would greatly add to their prosperity. He need not say, therefore, how gratified they had been to receive this proposal; and to find that the class, instead of opening with forty, had opened with ninety-five students. He hoped that the success of this scheme would be a cause of encouragement to employers in other art industries, moving them to go and do likewise. In Paris the art manufacturers made it conditional that their apprentices should study in the art schools, and they reckoned that study a part of the regular work of the day. When they did that in Birmingham he was satisfied that it would be of the greatest advantage both to employers and employed, and so to the general prosperity of the town. The number and variety of the applications of art to Birmingham industry could hardly be exaggerated. Birmingham, more than most towns should call in the assistance of the artist: and therefore his appeal had a peculiar importance and weight. Mr. Kenrick passed on to summarise the results of the science and art examinations conducted in Birmingham during the past year. He said that the third-grade passes in the central and branch schools had been 417, against 367 last year, and in the branch schools alone 59, against 32. The failures had been very few. The second grade elementary prizes principally concerned those whom he was addressing, but it was impossible to compare the results of this year with those of previous years, because the Department had altered their regulation. In previous years there had been two divisions, the "excellent" and the simple "pass," and so much apiece was allowed on a number of drawings which were sent up. This year they had no longer received those drawings, and they had regulated the passes so as to include apparently some who were before excluded. At all events, they had divided the successful candidates into three groups—excellent, first-class pass, and second-class pass. The management of the school was led to believe that the "excellent" was a rather higher examination than before, and the "first-class" rather higher than the old "pass." However, he had not been prepared for the enormous increase in the number of passes which had taken place. It was, as a fact, almost double that of former years, and in the branch schools it was more than double. He could only suppose that a number of drawings sent up in past years had been very near the old standard of pass, or that the work of the year had improved, or perhaps both. The total number of passes in the second grade had been 1,189, as against 655 in 1887; at the branch schools alone the number had been 754, as against 342; and there had only been 9 per cent. of failures, against 40 per cent. in the previous year, with 11 per cent. in the branch schools, as against 41 per cent. A summary of the third and second grade examinations showed 1,606 passes, against 1,022 in 1887, and that the failures had been at the rate of 35 per cent., against 53·86 per cent. 150 students had received third grade prizes, as against 152 in the previous year, and 7 students in advanced class had been similarly honoured, as against the same number. That branch of the work by which the teachers of the future were prepared had sent up from the central school 152 examples, against 101 in 1887, and all of them had been accepted as qualified to receive a certificate. From the branch schools, which were supposed to be elementary schools, 21 such works had been sent up and accepted. He wished that his voice could reach the builders and machinists of the town, asking them why they could not use a little more freely the facilities which were given at these branch schools for teaching building and machine construction and practical plane and solid geometry. He was sure it was only necessary to direct their attention to those facilities in order to find them willing to avail themselves of those branches of technical instruction. In comparing the results of Birmingham with those of other towns he was a year behind. The third-grade passes of Birmingham last year were 334, or 54 per cent. of the whole number; of Glasgow 100, or 20 per cent.; of Leeds 33 only; of Manchester, which had a very important school and was a dangerous competitor, 110 only, or 18 per cent.; of Sheffield, 79, or 20 per cent. The third-grade prizes of Birmingham were 115 in number, or 18 per cent. of those presented; of Glasgow 56, or 11·33 per cent.; of Leeds 18; of Manchester 63, or 10·5 per cent.; of Sheffield 26, or 6·5 per cent. The average of passes in 209 schools and 24 branches was 8·6 per cent. of the students sent up, and of prizes 2·8 per cent.—in each case one-sixth or less of the percentage achieved in Birmingham. The awards in the national competition were not quite so pleasant to contemplate. This year Birmingham had only received 30, against 47 in 1887 and 28 in 1886. Of these 30·19 were in the subject of design, which was an increase on the previous year, when they had 14. But Manchester had 53 such awards, South Kensington 22, West London and Glasgow 19, Lincoln 14, Nottingham 12, and Edinburgh 10. A rather remarkable and painful circumstance was that Birmingham received no award for painting or drawing from the figure. Now they had always flattered themselves, and they had been justified in doing so by the awards given in previous years, that the figure was one of the strongest subjects in their classes. Last year they received 18 rewards in that subject—two silver medals, four bronze medals, and fourteen book prizes. If they had received a similar number this year their awards would have been 48. What was the reason of the falling off? Was it a loss of teaching power and skill, or of ability on the part of students? Had there been any deterioration in the quality of the work? He was a layman in these matters, but he answered those questions without hesitation with a most decisive negative. It seemed from the report that they desired to see a real background behind the figures, and they protested against "the confusion which has arisen in some places, and in particular at Birmingham, between the kind of work necessary and desirable in a study from nature and that which may be allowable when composition in the treatment is necessary." They, as students, thought they had been complying with these conditions, but it appeared that they had not fully understood them. Therefore they had taken steps to ascertain from the Department exactly what its requirements were, and it would be their study—as it was their interest—to comply with those requirements, if, by so doing, they ran into no danger of stamping out all originality from the masters and students. If it should turn out, however, that the style of painting was condemned because it was not the precise style which approved itself to the examiners, as far as he was concerned, he would protest against what he would venture to call any such artistic bigotry. It would mean an attempt to conform all students to one style, which was not a national style—and would be injurious to the development of a national and spontaneous style of art. He hoped that that was not the interpretation to be put upon the opinions of the examiners. He did not affect to disguise the feeling by which he was actuated—that the schoolmasters and students had been harshly dealt with. He thought that they ought to have had a more direct intimation if their methods were so vicious, and deserving of such severe censure. They should have been told in plainer terms what their failings were. They had gone on in the dark, knowing that they were doing their best, and thinking they were doing very well. No one who looked at the paintings and drawings from life in the school would come away, whatever his opinion of style, without a very sincere respect both for the teachers and for the students who produced those works. Those very students whose studies from the life had been rejected, had received awards from the Department for decorative panels, in which they had used the knowledge they had gained by such life-studies. In those panels they seemed to him to show a great originality and very considerable knowledge of the resources of art. Such qualities the examiners could not pass over, and he was glad the students had received rewards for them, though not in proportion to their merits. Alderman Kenrick concluded with a few words addressed to the students themselves, whom he reminded that they were citizens of Birmingham, and that, having such a generous nursing-mother, much would be expected of them.

After the prizes were distributed,

Mr. E. R. Taylor, the Head Master of the School, delivered an address in continuation of remarks on a former occasion upon the development of design in Schools of Art. He first, however, referred to the Technical Education Bill, expressing regret that the clauses which provided for manual training as part of the school work of young children had not been made law by a special bill to themselves. Later in life the only things of value to the workman which could be imparted in schools were such principles and practice of science and art as they could apply in the workshops. The great hindrance to this application of the workman's knowledge was want of opportunity caused by commercial considerations. The London Society of Arts was making efforts to stimulate workmen and employers in this direction by the offer of very valuable prizes to workmen for their work. The potter on the wheel and the glass-blower at his furnace too often had their early art instincts crushed out of them by the conditions of manufacture. It was sad to see a potter who had spent fourteen of the best years of his life on the thrower's wheel to learn his trade, and developing a delicacy of eye and hand superior to that of most artists, ground down by the conditions of manufacture and the providing of daily bread, until his ambition had to be satisfied by producing 72,000 cups of exactly the same pattern in one week; or the glass-blower, with no opportunity for seizing and developing those artistic hints which the very processes of manufacture were continually presenting to him. Birmingham trades, such as those of glass-blowing, hammering of metals, jewellery, glass-painting, &c., however much they might be hampered by trade conditions, were happily not so much under the demon power of machinery as to render impossible opportunities for the artistic and technical development of the workmen, and now that the jewellery and glass trades were making such efforts for the better technical education of their apprentices they might reasonably hope that opportunities would be made available to workmen. As regards the teaching of design, Mr. Taylor endorsed the statement by Mr. Jackson (second master of the school), in a recent handbook, that design could be taught, if by that was meant simple composition and arrangement, based on laws which could be demonstrated; and added that beyond this the power of design in the higher sense—namely, the power of invention could be stimulated and brought into action. He pointed out, however, that though design was based on a close and reverent study of nature and a knowledge of the work of the past, and the laws, rules and motives which had been evoked out of this history, the work itself must be of the man and of the time. Three giants bound them in their doing: the material, the purpose and the limit of our powers. These also were the limits of conventionalism; all other conventionalism being affectation, or the slave bonds of precedent. The finest work of the past and the present grew from a sense of expression, a feeling for beauty of hue and a reverent love of colour. This was designing in the highest sense of the word, but in how much of the clever and dexterous work of to-day were these things absent. Scraps of natural forms, such as flower foliage, figures, &c., whether copied direct from nature or from books, and indiscriminately applied to objects of utility, were in no sense designs; nor were scraps of recognised ornament similarly applied. One sometimes heard it said, "We only want new shapes, for we have plenty of ornaments to stick on:" but such men forget that ornaments were not necessarily art, and that too often they were a cloak to hide the hypocrisy of bad work. Mr. Taylor went on to point out other things which were not design, such as revivals, the mere rearrangement of old forms, &c.: and gave some hints of practical utility to the students in relation to the practice of drawing from memory, and the cultivation of the fancy.

Alderman Powell Williams M.P., moved the following resolution:—"That the hearty thanks of this meeting be presented to the Head Master (Mr. Edward R. Taylor), for his interesting and able address." He remembered with regret that what was so easy to the young men and young women of to-day was impossible when he was of their age—to find their way through tuition such as Mr. Taylor gave day by day, through what was true in art to what was true in life, and through what was beautiful in art to what was pure in life. Those who came constantly in contact with Mr. Taylor's mind could hardly fail to recognise what was so important underlying the technical part of what he did, as it underlay the technical part of all art, and would join most heartily in thanking him for his address.

Mr. C. J. Hart, in seconding the motion, said that Mr. Taylor had the confidence of the Committee, the esteem of his colleagues and the affection of the whole school.

The resolution was carried by acclamation.

Alderman Sir Thomas Martineau moved, and Mr. J. W. Tonks (Hon. Secretary of the Birmingham Jewellers and Silversmiths' Association) seconded, "That the best thanks of this meeting be given to Alderman William Kenrick, M.P., chairman of the Museum and School of Art Committee, for his kindness in distributing the prizes: and to his Worship the Mayor (Mr. Alderman Pollack) for the courtesy and ability with which he has presided over the meeting."—This also was carried, and the proceedings terminated.

Douglas's Annual-Winding Clock.

We have received from the makers (the Douglas Patent Clock Company, of Vyse Street, Birmingham), a description of the above clock, as read by the patentee, Mr. W. H. Douglas, before the members of the British Association at Bath last month:—The great majority of clocks of the present day are dependent for accuracy of time on the isochronous beats in a *vertical* plane of a simple suspended oscillating pendulum, governing the motion of the wheel work by an escapement which allows one tooth of the escape wheel to pass at each swing; the *length* of pendulum regulating the rate of escape.

Galileo discovered the isochronous property of an oscillating pendulum and its use to regulate clocks. Isochronous beats in a *horizontal* plane can also be obtained by a pendulum or weight suspended by a tortion spring, and made to rotate backwards and forwards, allowing one tooth of the escape wheel to pass at each swing or turn of the pendulum, and thus to regulate the rate of escape.

Coulomb, 100 years ago, found by experiment that the tortion pendulum, within certain limits, is also isochronous, and is affected by change of temperature exactly in the same proportions as the oscillating pendulum of Galileo.

The tortion pendulum has a very *much* SLOWER rate, and by its use, escape of the energy of the mainspring is reduced so that it is possible, by the use of the tortion pendulum and a detached lever, to apply the tortion pendulum to eight-day clocks; by this means converting them to clocks requiring to be re-wound only once a year.

There is *no* change whatever in the wheel work or mainspring of an eight-day lever clock, except in the balance.

The balance is removed, and in its place a lever is fixed to the staff carrying the roller pin, which unlocks the lever escapement and receives an impulse at each beat in the usual way, the additional lever imparting impulse to a tooth attached to the pendulum, thus inducing tortion at each beat of the clock.

The regulation is effected by increasing the weight of the pendulum to make it lose, or decreasing the weight to make it gain.

It is also regulated by means of a French sliding curb, moved by a screw to the right or left, which lengthens the spring as desired, either to make it go faster or slower without stopping the clock.

The advantage gained by using the tortion pendulum with this escapement is, that the present form of an eight-day lever timepiece may be at once transformed into a clock that will continue to go accurately without re-winding for twelve months.

The escapement may be described as a *frictionless pendulum;* the impulse given direct across the line of centre, as in the chronometer, is independent of oil, and becomes detached at each beat. The isochronous property of the pendulum is not deranged by friction of any kind whatever. The cost of manufacture is precisely the same as in producing an eight-day timepiece. As these clocks are perfectly silent when going, they are especially suitable for the library and sick room.

Canadian Jewellers and the Retaliation Bill.

A TORONTO correspondent of the New York *Jewelers' Weekly*, writes:—The trade in Canada looks upon the retaliatory message of President Cleveland as having been forced upon him by the tactics of the Republicans, rather than as an expression of national sentiment. Should he receive the endorsement of the American people, however, the jewellers of Canada will not be affected as much as the American manufacturers with whom they deal.

For some years past, American jewellery has been gradually superseding that of English manufacture—in fact, has been steadily driving it out of the Canadian Market. Now, however, in the face of the President's message, matters are changing, and Canadian houses feel more inclined to place their orders in London and Birmingham than in the American centres of the jewellery trade. English houses are not backward in taking advantage of the situation, even going so far as to send out agents from the old country to press their goods on the Canadians on patriotic grounds.

Those Canadian houses which have made a practice of having English goods shipped to New York and there bonded through to Canada are now pursuing a different plan. In one instance a large New York consignment was stopped by cable before it had left the English firm and ordered to be sent by way of Montreal. In winter the receiving point for Canada from the old country will be Halifax, and in summer Montreal, whereas formerly New York got all the business.

As far as the *Weekly's* correspondent can ascertain, the opinion of the trade here is that if President Cleveland's message is sanctioned, Canada would be benefitted and the United States injured. Canada is practically independent of the States in her railroad and waterways, and will be entirely so as soon as the Sault Ste. Marie Canal is completed, the money for the work having already been voted.

"The Commercial Map of Coventry" is a new publication by Messrs. Smith & Jabet, High Street, which should be in the hands of everyone having business relations with that city. A handsome sheet, 32 inches by 34 inches, mounted on canvas and rollers; a centre space, 24 inches by 18 inches, is occupied with a plan of the city, showing the city boundary, the several wards (each in a different oolonr), the parish boundaries, proposed new roads, and footpaths. The situations of many public buildings are shown, and white numbers contained in red circles give references to the advertisements, which are arranged as a border.

Solders and Soldering.

Method of Soldering.

A THOROUGH cleansing of the surfaces to be united is always necessary, but more especially so in the case of soft solder. It may be effected by means of acids or with a graver, scraper, etc.; the cleaned surfaces must not be touched with the fingers, and the soldering should be done at once. If acids are employed, the objects should be thoroughly washed after soldering in order to avoid rust; and, after drying, they should be rinsed with alcohol.

The parts to be soldered are held in position with clamps, tweezers, pins or iron wire. This latter, known as *binding wire*, is used for delicate objects and should be very pliable. When a high degree of heat is to be applied, all risk of the iron uniting with gold may be avoided by mixing a little sandiver with the borax employed.

Before heating, if there are already parts united with solder, they should be covered with borax to prevent softening.

Only a moderate heat should at first be applied, so as to melt the borax or sal-ammoniac without displacing it. The violent frothing up, which is very liable to displace the parts or the fragments of solder, can thus, in greater part be avoided. If a naked lamp flame is used, or if it is directed on to the object with a blowpipe, it should be, so to speak, large and soft, and the jet should not be directed to the point of juncture until it is observed that the solder has fused. In soldering brass to steel it is sometimes necessary to direct the flame against the brass only in order, as far as possible, to avoid softening the steel. The hard solder for gold, silver, etc., requires a considerable degree of heat, so that the objects must be heated to redness.

To solder gold and platinum to each other or to themselves.—On a hard wetted surface, marble, for instance, rub a piece of borax until a white liquid paste is obtained (or the powdered borax sold by chemists can be made into paste direct). Having prepared the borax, the surfaces to be united are cleansed either by scraping or with dilute nitric acid; the acid may be previously heated to boiling, as it will then act more rapidly; and the surfaces are subsequently scraped. They are now covered with the borax with a paint brush, set in position, and small pieces of solder placed on the junction. As already observed, the heating must at first be gentle to avoid displacing the solder by the frothing of the borax.

To solder silver.—Also for uniting gold to silver, or silver, brass and steel to each other or to themselves. Proceed in the manner already explained for gold and platinum, except that the borax paste must be sensibly thicker.

To solder tin.—Also for uniting gold, silver, brass to each other or to other metals, such as steel, iron, &c. Clean the surface with a graver or scraper; sulphuric or hydrochloric acid may be used, but in this case the cleansing afterwards must not be forgotten.

The heating is effected as in soldering gold, unless a soldering iron is used, when the directions subsequently given should be followed.

To solder aluminum.—M. Mourey recommends the following methods:

One of the series of aluminum solders before mentioned is employed, and, as a flux, two-thirds of balsam copaiba, one-third very pure Venice turpentine, and a few drops of the juice of a lemon; these constituents are pounded together in order to secure a perfect admixture.

The surfaces to be united are covered with solder (employing a soldering iron of aluminum), just as in the case of tinning, the flux just mentioned being used. The two surfaces thus prepared are placed in contact and maintained in the required position, and, after laying on the joint particles of solder that are richer in aluminum than the one used for preparing the surfaces, the whole is placed over a charcoal fire or heated before the blowpipe, pressing gently on the pieces of solder, which will soon melt, and should be distributed by means of a little tool of aluminum.

(To be continued.)

Applications for Letters Patent.

The following List of Patents has been compiled especially for *The Watchmaker, Jeweller and Silversmith*, by Messrs. W. P. Thompson & Boult, Patent Agents, of 323, High Holborn, London, W.C.; Newcastle Chambers, Angel Row, Nottingham; and 6, Lord Street, Liverpool.

11,976. George Bland, Woodford, for "A watch protector." Dated August 18, 1888.

12,074. Le Comte E. de Rottermund, London, for "A new or improved process for extracting gold, silver and other metals from refractory ores, sands and residues." Dated August 21, 1888.

12,202. J. B. Hannay and R. Tervet, Glasgow, for "Improvements in processes and apparatus for obtaining gold and other metals from ores." Dated August 24, 1888.

12,243. C. D. Mayer and August Velluet, London, for "An improvement in watches to render them applicable as alarum watches." Dated August 24, 1888.

12,348. J. C. Osborne, Birmingham, for "Cleaning gold, silver, silver plate, German silver, nickel silver and brass." Dated August 28, 1888.

12,394. F. A. Sommer, London, for "An improved base or back plate spring fastener for studs, solitaires and the like, in pairs." (Complete specification.) Dated August 28, 1888.

12,396. W. P. Thompson, a communication from D. W. Edgecomb, United States, for "Improvements in electric motors for self-winding clocks." (Complete specification.) Dated August 28, 1888.

12,503. P. Bergna, London, for "An improved method of fastening brooches and the like to fabrics." (Complete specification.) Dated August 30, 1888.

12,520. F. A. Field, London, for "Holder for securing flowers to dresses and drapery, also applicable as a brooch." Dated August 30, 1888.

12,546. H. Mechin, London, for "Improvements in the making and manufacturing by machinery or otherwise of watches and clocks." Dated August 31, 1888.

12,768. R. F. Starkie and A. Copley, London, for "Extracting fine gold from auriferous ores or tailings by an improved process of amalgamation." Dated September 4, 1888.

12,847. F. W. Hayward and F. Mills, London, for "Improvements in brooches, lockets and other articles of personal adornment, and in apparatus for imparting motion to parts thereof; a portion of the said apparatus being also applicable for other purposes." Dated September 5, 1888.

12,905. W. Sapte, jun., London, for "An improvement in watch cases." Dated September 6, 1888.

12,928. C. F. Gummett and J. Cooke, London, for "An improved joint and pin for brooches, badges, and for other such-like purposes." Dated September 7, 1888.

12,962. C. Jackson, Birmingham, for "Improvements in fastenings to be used as sleeve links and for other purposes." Dated September 7, 1888.

13,053. W. Demenga, London, for "Improvements in universal dials for watches, clocks, and the like." Dated September 10, 1888.

13,060. R. J. Webb, London, for "Improvements in dials for clocks, watches, weighing machines and the like." Dated September 10, 1888.

13,178. H. G. Planner, London, for "Improved dress and brooch pins." Dated September 12, 1888.

13,223. G. Scarlett, Liverpool, for "Improvements in or relating to electrical alarm clocks and indicators." Dated September 12, 1888.

13,328. F. S. Arnold, Oxford, for "Clasping ends of chains, ropes, jewellery; fixing detachable rods—*e.g.*, fixing the two parts of a detachable shirt stud or engine crank; and as a general automatic catch." Dated September 15, 1888.

13,391. E. C. Whitlock, London, for "A device for preventing purses being stolen from the person." Dated September 17, 1888.

13,397. E. J. Redgrave and C. Bordes, London, for "A clock dial with transparent hands, minutes and figures." Dated September 17, 1888.

13,492. O. A. Berend, a communication from C. Sevecke, Germany, for "An apparatus for illuminating watch faces during the night, and for analogous uses." Dated September 18, 1888.

Recent American Patents.

Alarm Clock Case. D. B. Tiffany	389,120
Apparatus for Working Metals by Electricity. N. Bernardos	388,246
Arbor for Clocks, Watches, &c. W. N. Weeden	387,469
Balance Staff for Watches. C. Morlet	387,247
Button. E. S. Dodge	388,402
Button. J. U. Adams	389,042
Cannon Pinion. L. C. Briggs	388,625
Circuit Closer for Electric Clocks. C. D. Warner	387,703
Compensation Balance. A. F. Pickert	387,567
Crown Setting for Jewellery. N. L. Ripley	387,449
Distance Instrument. J. B. Faucette	387,633
Electric Clock Synchroniser. A. G. Wiseman	387,276
Electric Clock Synchronising System. C. J. Hexamer	387,974
Electric Clock System. C. D. Warner	387,704
Electric Motor for Self-winding Clocks. F. W. Brainerd	388,622
Jewellers' Lathe Chuck. H. N. Moseley	388,573
Marbleised Wood. W. S. Ingraham	387,977
Marbleising Wood. W. S. Ingraham	387,885
Match Box. H. Gaas	388,354
Means for making Pinions for Clocks and Watches. W. N. Weeden	387,470

Means for making Pinions for Clocks and Watches. W. N. Weeden	387,472
Mechanical Musical Instrument. M. Gally	387,635
Metallic Alloy. H. Ostermann and C. Lacroix	388,145
Metallic Alloy. H. Ostermann and C. Lacroix	388,146
Metallic Alloy. H. Ostermann and C. Lacroix	388,147
Metal Tube. H. W. Hayden	388,867
Metal Tube. J. Callam	388,824
Method of making Arbors for Clocks, &c. W. N. Weeden	387,548
Method of working Metals by Electricity. N. Bernardos	388,245
Musical Box. J. Billon-Haller	388,947
Non-magnetic Alloy. A. H. Robert	388,152
Nose Guard for Eyeglasses. G. H. Emerson	388,545
Self-setting Timepiece. A. Rosenbaum	389,111
Setting Mechanism for Watches. A. Fischer	388,404
Stem Winding and Setting Watch. A. L. Keller	387,306
Stem Winding and Setting Watch. J. Duplain	388,186
Stem Winding Watch. S. A. Durgin	388,648
Watch. H. Hammerland	388,036
Watch Balance. C. K. Giles	387,973
Watch Case. G. C. Smith	387,321
Watch Case Spring. C. Teske	388,157

A printed copy of the specifications and drawing of any patent in the American list, also of any American patent issued since 1866, will be furnished from this office for 2s. 6d. In ordering, please state the number and date of the patent required, and remit to J. Truslove, Office of *The Watchmaker, Jeweller and Silversmith*, 7, St. Paul's Churchyard, E.C.

Gazette.

PARTNERSHIPS DISSOLVED.

H. Searl and G. White (trading as H. Searl), Birmingham, manufacturers of tools. Pickard & Curry, Gt. Portland Street, manufacturing opticians, so far as regards J. F. Pickard. J. F. Pickard & W. Curry, Liverpool, retail opticians. T. May & Co., Birmingham, napkin ring manufacturers. Pearson Bros. & Leaver, Sheffield, jewellers. William Crutchley & Son, Birmingham, wire drawers. Isaac Whitehouse & Co., Birmingham, stampers. Thomas Bradbury & Sons, Sheffield and Charterhouse Street, E.C., silversmiths. Bullas & Co., Sheffield, art workers in metal.

THE BANKRUPTCY ACT, 1883.

RECEIVING ORDERS.

To Surrender in London.—George William Smith, Old Bond Street and elsewhere, jeweller. William Geddes, Gt. Marlborough Street, diamond merchant.

To Surrender in the Country.—Frederick Bailey, Wood Green, jeweller. Joseph Scott, Dorchester, jeweller. Arthur Clarke Count, Newcastle-on-Tyne, jeweller. Henry John Brown and Edward Francis Brown (trading as William Brown), Sheffield, jewellers. Edward Amans, Eton, watchmaker.

PUBLIC EXAMINATIONS.

In London.—J. Shonman, Whitechapel Road, watchmaker; October 22, at 11.30.

In the Country.—J. Scott, Dorchester, jeweller; October 11, at 12.15. W. Terry, Coventry, watch material dealer; October 29, at 2.

ADJUDICATIONS.

In the Country.—Frederick Bailey, Wood Green, jeweller. T. Johnson, Ossett and Newcastle-on-Tyne, watchmaker. A. C. Count, Newcastle-on-Tyne, jeweller.

NOTICES OF DIVIDENDS.

In London.—W. Jardine (trading as Jardine & Co.), Gt. Winchester Street, City, diamond merchant; 10*d.*, first; September 17, W. Hurlbatt, 8, Old Jewry. B. McM. Wright, Regent Street, mineralogist; 5¾*d.*, first and final; October 2, 9, Walbrook, E.C.

In the Country.—S. Hughes, Llangollen, watchmaker; 20*s.*, first and final; September, Bankruptcy Office, Chester. F. Hall, Whitby, watchmaker; 20*s.*, and 4 per cent. interest, first and final; September, Official Receiver, Middlesbrough. C. Fitzgerald (separate estate), Bristol, watch manufacturer; 2*s.* 2*d.*, first and final; September, Official Receiver, Bristol. T. Young (separate estate), Bristol, watch manufacturer; 3*s.* 9*d.*, first and final; September, Official Receiver, Bristol. A. Chesterton, Nottingham, watchmaker; 1*s.* 7*d.*, first and final; September, 17, Northampton Street, Birmingham. A. Hewitt, Great Grimsby, Lincolnshire, watchmaker, 1¼*d.*, second and final; October 1, Official Receiver, Trinity House Lane, Hull. C. J. McKenzie, Dover, watchmaker, 3*s.* 7¾*d.*, first and final; September 26, Official Receiver, Ashford. G. Saxby, Folkestone, watchmaker; 4*s.*, first; October 3, Conley, Foord Road, Folkestone.

BANKRUPTCY.

In re Jacob Shouman, 48 and 257, Whitechapel Road, E., watchmaker and jeweller. The statement of affairs filed in this recent failure discloses liabilities to unsecured creditors amounting to £188 11*s.* 4*d.*; to partly-secured creditors, £90—the value of the security being estimated at £40, thus showing a balance of £50 to rank against the estate for dividend, making a total of £238 11*s.* 4*d.* The assets consist of "property" and book debts, and are estimated to produce £22—less £10 for the claims of preferential creditors payable in full; leaving net assets at £12 and disclosing a deficiency of £236 14*s.* 4*d.*

In re Thomas Johnson, Bank Street, Ossett, and Shenhouse Temperance Hotel, Newcastle-on-Tyne, watchmaker and jeweller. The following is a summary of the statement of affairs filed by this debtor under a receiving order made against him on the 18th ult. To liabilities due to unsecured creditors, £333 9*s.*; and assets consisting of stock-in-trade, cost £126; trade fixtures, fittings, &c., cost £40; furniture, cost £30: these together are estimated to realise £110: Book debts good, £10: total assets, £120, from which £2 14*s.* has to be deducted for the claims of preferential creditors payable in full, leaving net assets at £117 6*s.*, and disclosing a deficiency amounting to £216 3*s.*

In re Joseph Scott, Cornhill, Dorchester, jeweller. A meeting of the creditors of this debtor was held at the office of the Official Receiver, at Salisbury, on Wednesday. Mr. J. K. Dowden presided. The statement of affairs disclosed unsecured liabilities amounting to £1,252 5*s.* 1*d.*, and assets, £528 12*s.* 3*d.*—less £37 13*s.* for preferential creditors, £490 19*s.* 3*d.*; leaving a deficiency of £761 5*s.* 10*d.* The debtor assigned his failure to dearth of business. Messrs. Eliot, Pearce & Co., bankers, Dorchester, were the largest creditors, namely, for £1,495 10*s.* 1*d.*, but they held some securities, which reduced the claim to £995 10*s.* A composition of 5*s.* in the pound was offered, but the chairman declined to accept this, inasmuch as after the expenses of winding up the estate in bankruptcy had been allowed for, 6*s.* in the pound could be cleared. After some discussion Mr. J. M. Lock, of Dorchester, guaranteed 6*s.* in the pound, and it was resolved that the Official Receiver should distribute the assets among the creditors.

In re William Geddes, Gt. Marlborough Street, W. The debtor, a diamond merchant, has had a petition presented against him, and upon the application of Mr. Tough, a receiving order was made against the estate. The debtor states the liabilities at about £5,000.

The Deeds of Arrangement Act, 1887.

Ingram, Richard, watchmaker and jeweller, Heckmondwike, York. Deed of Assignment and Composition, dated September 8, and filed September 12. Composition 6s. 8d. in the pound, payable as follows:—2s. 3d. in three months; 2s. 3d. in six months; and 2s. 2d. in nine months, from August 31, last, with assignment of estate as security. Unsecured liabilities, £1,199 1s. 2d., and assets, £597 10s. Trustee, Mr. John Butterfield, accountant, 1, Manchester Road, Bradford.

Lister, Wooldridge, jewellers' factor, 49, Frederick Street, Birmingham. Deed of assignment for the benefit of creditors, dated September 3, and filed September 8. Unsecured liabilities, £12,699 9s. 4d.; secured creditors, £350; and net assets, £5,355 5s. Trustee, Mr. Allen Edwards, accountant, 14, Bennett's Hill, Birmingham; Committee of Inspection, Charles Green, manufacturing jeweller, 48, Augusta Street, Birmingham; Walter Best, manufacturing jeweller, Northampton Street, Birmingham; Henry Robert Wright, manufacturing jeweller, 9, Vyse Street, Birmingham; and H. W. Hyde, manufacturing jeweller, Warstone Lane, Birmingham.

Smith, Francis, watchmaker and jeweller, 60, Darwen Street, Blackburn. Deed of assignment for the benefit of creditors, dated August 28, and filed September 4. Unsecured liabilities, £459 14s. 1d.; secured creditors, £152 10s.; and net assets, £247 10s. Trustee, Mr. Thomas Waterworth, accountant, Victoria Street, Blackburn.

Correspondence.

All Letters for Publication to be addressed to the Editor *of* The Watchmaker, Jeweller and Silversmith, 7, *St. Paul's Churchyard, E.C.*

All communications must bear the name and address of the sender, not necessarily for publication, but as a guarantee of good faith.

To the Editor of *The Watchmaker, Jeweller and Silversmith.*

TWENTY-FOUR O'CLOCK.

Dear Sir,—The French Government has, as you know, determined to have one standard time for the whole of France. Paris, as in all other matters, except Boulangism, is to give the cue to the Provinces. All clocks are to be synchronised by Parisian time.

This innovation is, after all, only of local value. We are still far off from the realisation of that dream of dreamers—Universal Time.

Was it not agreed at the Conference, held some years ago, that England should count the hours from 1 to 24?

Yet this sensible project has not been taken up by the watchmaker's trade as it deserved to be. What is the good of theory without practice? The advantages of Universal Time are as obvious as Universal Money, Universal Measures.

The hours should be independent of light and darkness, like the *vigiliae* of the Romans.

The watchmaker of the nineteenth century surely can afford to be independent of the vagaries of the sun, who gets up too early in the summer and too late in the winter.

If you wish to convince yourself of the absurdity of the regulations applying to time, study page 65 of your *Whitaker*. You have but to take a boat to Calais, and you are compelled to regulate your watch.

A morning contemporary followed for some months the plan laid down at the Congress, and under "Meetings for to-day" gave the time as from 1 to 24.

The least thing *The Watchmaker*, as the most powerful organ of the trade, can do, is to further the object of the Congress, and bring us within measurable distance of Universal Time.

I am, Sir,
Yours faithfully,
HUGO.

"X.O.N." AND PRACTICAL ARTICLES.

Sir,—It is in vain that we unhappy watch-jobbers scan the pages of your valuable journal month after month in search of the once well-known initials, X.O.N. Has he gone over to the majority? Seriously, I hope not; for men of his kind, who are able and willing to lend a hand to their less favoured country brethren, apparently do not seem to be very numerous.

If X.O.N. only knew how much his articles were appreciated in country districts, by apprentices who are striving hard to learn their trade, but have no means of doing so save through the pages of trade journals, he, I am sure, would not remain silent any longer.

Before me lies the number of your journal containing X.O.N.'s first article—an article which being but the precursor of many more, was hailed with great joy. In it we read "These articles will be written primarily with a desire to impart practical information to a large and increasing number of watch-jobbers, whose early education has not afforded them the opportunity of acquiring the knowledge necessary to enable them either to understand or handle really good work, etc." I give this quotation partly to justify myself in writing this letter, and partly to remind X.O.N. of the primary object of his letters. I hope he will continue his valuable articles, for I am certain those for whom he wrote—the country apprentices especially—did find in those articles that practical information which it was X.O.N.'s intention to supply. For my own part I desire to thank X.O.N. for the information thus given, and I hope, sir, that your esteemed journal will in future be rendered yet more valuable by a regular series of monthly papers on watch-jobbing, and I venture to say that many who at present know the journal only by hearsay, will be grateful to you and to the writers of the articles, and glad to become regular subscribers.

Permit me to say what I think to be one of the causes of so much reticence on the part of those who are well able to write thoroughly good articles—articles that would do a world of good and be gratefully appreciated by those who from year to year see little or nothing of really good work. It is the carping criticism of those who, on some minor points of no importance whatever, do not see exactly as the writer sees, and think, therefore, that the article requires correction in that particular point at least. In my opinion this does a great deal of harm, and tends to discourage intending writers, the consequence being that a large class of learners, who have only the trade journals as teachers, look in vain week after week and month after month for articles to help them on in their laudable desire to become workmen, and to raise them in the estimation of the people.

Trusting that this rather lengthy letter may find a corner in your next issue, and hoping also that the end for which it is written may be secured,

I remain, yours, &c.,
A LATE APPRENTICE.

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WANTED, a good SECOND-HAND WALL CASE, Mirror Back. Plate-glass shelves, Length about 4ft. 6in., Height 6ft., Ebony Case preferred. Apply F. Richardson, Watchmaker, Stockton-on-Tees.—[Advt.]

COLONIAL AND INDIAN EDITION

OF

The Watchmaker, Jeweller and Silversmith.

TO THE WHOLESALE TRADE.

The Publishers of *The Watchmaker, Jeweller and Silversmith* beg to announce that the next Special Edition of the Journal for the British Colonies and India will be issued in December.

A copy will be sent to 3,000 of the best Colonial and Indian Watchmakers, Jewellers and Silversmiths, and resident Merchants supplying the trade.

Particulars of Advertisement charges will be sent upon application to the Publishers, Messrs. Truslove & Shirley, 7, St. Paul's Churchyard, London. Early communication is suggested, as (owing to the postage) the Advertisement space is limited.

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CLOCK MANUFACTURERS.

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Walton, G. E. & Co., 52, Hylton Street, Birmingham. (*See Advt.*)

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Newbold, A. W., Jun., 58, Compton Street, Clerkenwell, E.C. (*See Advt.*)

Perken, Son & Rayment, 99, Hatton Garden, E.C. (*See Advt.*)

Raphael, J. & Co., 13, Oxford Street, London, W. (*See Advt.*)

Taylor, Jno., 49, Tenby Street North, Birmingham. (*See Advt.*)

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The

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The Watchmaker, Jeweller and Silversmith.

A Monthly Journal devoted to the interests of Watchmakers, Jewellers, Silversmiths and kindred traders.

Correspondence.—Correspondence is invited on all matters of interest to the trade. Correspondents will please give their full address in each communication, not necessarily for publication, but as a guarantee of good faith.

Subscription.—A copy of the Journal will be sent monthly for one year, post free, to any address in the United Kingdom or countries in the Postal Union for 5s. payable in advance.

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Address all business communications to the Publishers,

MESSRS. TRUSLOVE & SHIRLEY,
THE WATCHMAKER, JEWELLER & SILVERSMITH,
7, ST. PAUL'S CHURCHYARD,
LONDON, E.C.

Cheques and Postal Orders to be made payable to J. TRUSLOVE.

Editorial.

THE Annual Ballad Concert in aid of the funds of the Clerkenwell Benevolent Society will take place at the Agricultural Hall, Islington, on the 3rd of next month, and from the list of popular artists who are announced to take part in it, there is every reason to anticipate that it will be attended with its usual successful results. From the report issued last month, it appears that the Society is steadily growing in the number of its supporters and the benefits it dispenses—the subscriptions collected in the past season amounting to £151, which is the largest amount yet received from that source, being an increase of nearly one-half in the past two years.

While this satisfactory state of affairs is dwelt on with justifiable complacency by those who have had so much to do with bringing it about, it is at the same time pointed out that an increase in the number of subscribers means an increase in the deficiency that has to be met, as hitherto every subscriber has received in relief, tickets considerably more than the value of his or her subscription. The Committee, therefore, renew their appeal to the subscribers and their friends for co-operation and support. There can be no doubt that the system of relief through the distribution of these subscribers' tickets affords a far more effective means of ascertaining and aiding deserving cases than can any indiscriminate almsgiving, without having the pauperising tendency of the latter, and it is to be hoped the result of the Committee's appeal will enable a still further extension to be made in this direction.

ONE of the most puzzling, as well as interesting, problems in connexion with trade economics is that of the location of many manufactures and of the collocation of the different branches of others with respect to one another without any apparent reason, *primâ facie*.

In those trades, such as iron-smelting, ship-building, &c., where economy of production is furthered by local natural advantages, the reason for their establishment in a particular locality is easily understood; and for the larger manufactures, which are dependent on the coal, iron, engineering and other trades, the reason for their situation is also evident. But why locality should exercise so much influence on the smaller crafts (taking it for granted that it does so) is not so obvious.

Taking, for example, some of the trades with which we are concerned, in which the conditions for their being carried on would seem to be as favourable in almost any one place as any other: Why should watchmaking be confined to such centres as Clerkenwell or Coventry; movement-making to particular parts of Lancashire; the jewellery manufacture to Birmingham; electro-plating to Sheffield, and so on? are questions which occur to the outside observer, and that are easier asked than answered.

Without having in mind any particular one of the trades named, however, it may at once be said (speaking generally), that the present situations of the industries referred to, and (perhaps in consequence) many of the conditions under which they are carried on are the result rather of a survival of a past state of things than of any creation of the present time. A want of cohesion of the various parts which go to constitute the trades as a whole, has heretofore had the effect of making outside influences less felt on each of the trades as a whole, and this non-corporate state of each industry has undoubtedly been detrimental to its advancement, as compared with a similar industry in other and competing communities in so far as regards the establishment of fresh concerns on a broader basis. It is far easier to establish such concerns on comparatively virgin soil than on ground that has been worked, however primitively. Promoters of companies enquire rather into what has been done than what can be done, and (superficially assuming all men and projects to be of more or less equal merit) look with disfavour upon the comparatively little that has been achieved in a similar direction—the proposed departure being of necessity not sufficiently pronounced for non-technical comprehension. Every watchmaker will acknowledge that the English trade has suffered commercially from too much individuality on the part of manufacturers; for, while such concerns as are at present flourishing are undoubtedly the result of individual enterprise and energy, on the other hand, a large amount of energy has been wasted from its conflicting tendency on the trade as a whole. Trade opinion seems at present to be in a favourable mood for receiving direction into a common channel, and it would be satisfactory to see steps taken by a few of the leading spirits for kindling a much-to-be-desired enthusiasm to that end. The operation of the Merchandise Marks Act has so far shown unlooked-for possibilities for the resuscitation of the English trade (in the manufacture of complicated watches, &c). It is to be hoped the healthy stimulus will not be allowed to stop until the manufacture has once more regained its ascendancy on a firm basis. There is plenty of material to work with—all that is required is more confidence on the part of manufacturers.

We call attention to the article, published on another page, of our Barcelona correspondent. The most instructive lesson to be learned from the account of this great collection of the world's products is the astounding absence of English manufacturers' names from the list of exhibitors in the jewellery and kindred trades. What can our great manufacturers have been about to let such an opportunity slide? Is this important market not worth cultivating? Or do they imagine that English goods have such a firm hold in Spain as to defy the allurements of foreign producers? Here we find enumerated the names of makers from every quarter of the globe, from those of the effete Turk to the enterprising Yankee, who think it good enough (to use the latter's expression) to push the trade for all it is worth. French, German, Swiss, Austrian, Italian names all are FOUND here but English. And this, in the face of innumerable consular and other reports lamenting and reiterating the fact that the recent depression and falling off in the volume of English trade in foreign markets, are distinctly traceable to want of representation and push on the part of home manufacturers. Let us hope this is in the present instance due only to a mistaken appreciation of the value of the Barcelona exhibition as an international show, and that our manufacturers are girding up their loins for a worthy effort to be put forth next year in the French capital.

General Notes.

Among the centrepieces which are used on the Queen's table is one given by Francis I. to Henry VIII., and several other masterpieces of gold and silver work from the hands of Italian artists who lived in the best time of the Renaissance.

The diamond tiara which the Duke of Aosta presented to his bride cost £17,000. It contains eleven-hundred-and-fifty stones, and is so arranged that it can be taken to pieces, and converted into necklace, bracelets, earrings, and a small diadem.

Mr. Arthur Short, formerly carrying on business as a watchmaker at High Street, Hampstead, whose disappearance and reported suicide in the Lea in August, 1883, caused a sensation at the time, put in an appearance at the Divorce Court last month, where his wife obtained against him a decree *nisi*.

A Birmingham Jeweller's Misfortune.—At Gloucester, on the 19th ult., Arthur John Luke, 4, Kingswood Road, Moseley, Birmingham, jeweller, was charged with attempting to commit suicide. The Recorder, having no doubt that the unfortunate man was in very great distress at the time, discharged him after a nominal punishment.

At a meeting of the members of the London Watch Trade Association, held last month, at the Crown and Woolpack, St. John Street Road, under the presidency of Mr. S. A. Brooks, the chairman wished it to be known that if any one knew of foreign movements being put in English hall-marked cases they had power, under the Merchandise Marks Act, to apply for a warrant to search the premises where the work was being carried on. If such practices were found to prevail the goods would be confiscated.

The Turners' Exhibition.—The twentieth annual exhibition of specimens of turning, under the auspices of the Worshipful Company of Turners, was opened on the 24th ult. at the Mansion House. The competition was divided into four sections—diamonds, stone, glass and pottery. As might be expected, the two last sections occupy the most space and form altogether an interesting display. For diamond cutting, in which the first prize was not awarded, A. E. Ayers takes a second prize.

Mr. Samuel Lyons, of Preston and Blackpool, jeweller, whose branch at the latter town was broken into in August last, offered a reward of ten pounds for the conviction of the offender. We now learn that Mr. Lyons called upon Messrs. Wm. James and John Hayhurst, pawnbrokers, Preston, through whose instrumentality the thief was apprehended, and handed them a cheque for that amount. The prisoner, Thomas Jones, was, on the 18th ult., sentenced to twelve months' imprisonment with hard labour.

Marriage of Mr. Kenneth Rotherham.—On the 3rd of last month, Mr. Kenneth Rotherham, eldest son of Mr. A. Rotherham, of Coventry, was married at Bulkington Church to Miss Eustace, eldest daughter of the Rev. G. J. Eustace, vicar of that parish. There were no bridesmaids, and the bride was married in her travelling dress. She was given away by her father. The presents included one from the Coventry Football Club, of which the bridegroom has been an active member. The newly-married couple left in the afternoon for Westmoreland.

The Jubilee gift of the officers of the army to the Queen is at length nearly completed. It has been designed by the distinguished sculptor, Gilbert, and is an exquisite work of art. It is to form a centrepiece for the royal dining table, and is nearly three feet in height. The design is strangely graceful. A large double shell, formed of silver in the shape of a nautilus, is supported on a pedestal of laminated metal. Out of it rises a crystal globe, on which are worked in silver and gold, shells and sea plants, and the whole is surmounted by a figure of Victory, the lovely contours of which, combined with the airy lightness of the *pose* recall the best work of Cellini. On one side of the pedestal is a figure of Britannia, and on the other of St. George.

The Paris Exhibition.—Mr. H. T. Wood, Secretary to the Executive Council of the British Section, writes from 2, Walbrook, E.C.:—"In consequence of the misleading statements having appeared in the papers relative to the official publications of the Paris (1889) Exhibition, I have been asked by the Executive Council, now sitting at the Mansion House, to state that no 'official agent' has been appointed, either by the French Executive or by the British Committee. A catalogue of the British Section will be published by Messrs. W. Clowes & Sons, who will also print an English guide to the Exhibition. An official catalogue in French will also be issued, the *concessionaire* for this being M. Danel, of Lille."

The Hatton Garden Diamond Robbery.—The officers of the Criminal Investigation Department are, we are informed, making strict inquiries with regard to the robbery by a man from several of the well-known large diamond dealers of Hatton Garden, of diamonds, pearls, &c., valued at between £6,000 and £7,000, and against whom the police have a warrant. It appears that a person of the name of Michael Eisenberg, a Roumanian, who had an office in Hatton Garden for a few months, and who had documents from some well-known people recommending him to different diamond merchants, went to some of them, and, it is alleged, obtained several valuable diamonds, pearls, and other precious stones, on the representation that he wished to show them to certain customers. He was allowed to take them away on approval, but since then nothing has been seen or heard of him. A description of the property having been obtained, notice to pawnbrokers and dealers has been given.

Messrs. Mann and Taylor, the solicitors, who obtained the warrant for the arrest of Eisenberg, received information later that a telegram in the Roumanian language was received in London by a member of Eisenberg's family from Naples, stating his intention to go to Alexandria. The police in Naples were at once communicated with, and the man's arrest is hourly expected. His extradition will then be demanded. A considerable quantity of the stolen property has been discovered pawned with several well-known firms of pawnbrokers, and it is hoped eventually that the merchants' loss will not be so great as was generally expected.

New Watch and Clockmaking School.—A class for instruction in watch and clockmaking was opened on the 9th ult., at the Heriot-Watt College, Edinburgh, under the tutorage of Mr. John Meek, Diplomé of the Geneva Horological School. The class is intended both for journeymen and apprentices, and the various subjects will be treated both practically and theoretically. Prizes will be awarded at the end of the Session, and students will be prepared with a view to competing at the City and Guilds' examinations.

The Naval Jubilee Memorial.—There are now on view at Messrs. Hodd and Son's, Minerva Works, 30 and 31, Hatton Garden, the silver models of her Majesty's ships Britannia and Victoria, to be presented to her in commemoration of her jubilee. As thus represented these two vessels are respectively typical of the highest form of naval construction at the beginning of the Queen's reign, in 1837, and in the Jubilee year. The details of the work all exhibit minute accuracy and exquisite finish. The models will be on view from 10 a.m. to 5 p.m. up to the 10th of November.

Professor Rudler, says "Anglo-Australian" in the *European Mail* who is rather a *bête noir* to "Australian ruby" shareholders, on account of the adverse opinions which he has given concerning those precious stones, has been taking a very active part—being occupied day and night—at the meetings of the International Geological Society. Professor Rudler, it will be known, is the head of the Museum of Practical Geology in London. Dr. Sterry Hunt, who is called the Canadian Delegate, has also been distinguishing himself at the gathering, with other Transatlantic men of science.

Henry R. Bolding, described as a jeweller, was on September 28, at the Middlesex Sessions, sentenced to eight months' hard labour for stealing three gold chains and a bracelet, the goods of Mr. Daniel Welby and another, of 20, Garrick Street, Covent Garden, and a quantity of rings, the property of Messrs. Whitehorn, of Featherstone Buildings, Holborn. Prisoner, in his defence, said he looked upon the case as one which ought to have been the subject of a civil action, and not a criminal one; but the Assistant-Judge thought differently, and said it would be a lamentable thing if, in this commercial country, persons like the prisoner should be allowed to remain under the impression that they could obtain goods, pawn them almost immediately, and then say, "Oh, this is a matter for a civil action."

The Jewellers won't mind.—The Emperor's tour in Austria and Italy will cost not less than £40,000, says *Truth*. The amount which he has to give away to the servants of the Sovereigns whom he visits is something fabulous, and the presents of various kinds cost a frightful sum. The Emperor took with him from Berlin, 80 diamond rings, 150 silver stars, 50 scarf-pins, all richly jewelled; 30 diamond bracelets, six splendid presentation swords, 30 large photographs of himself, with the Empress and their children, all in gold frames; 30 gold watches, with chains, (one of these is the correct present to a kitchen functionary); 100 cigar-cases, with the Imperial arms and monogram in gold; and 20 stars in diamonds of the Orders of the Black and Red Eagle.

A Point of Law.—A London lady staying in Wales was some time since robbed of a diamond necklace, value £150. She recently received an anonymous letter. The writer said that being in sore need she took the necklace, but without fraudulent intention. She was now on the point of sailing for a far country, and took the opportunity of saying that the necklace had been pawned for £35 with Messrs. Woods, of Birmingham. The matter came before the Birmingham magistrate last month. Messrs. Woods did not deny having received the necklace from a lady who seemed a likely owner of such a jewel, but they submitted that they were not called upon to give it up to the present claimant, because it was not received as a pledge, but under special contract which the law did not affect. Eventually they gave up the necklace for £10.

A Co-Operative Conference of the Midland Section of the Co-operative Union was held last month in the Assembly Room, West-orchard, Coventry. Mr. J. Hepworth, President of the Coventry Co-operative Watch Manufacturing Society, presided, and in the course of his address he referred to the extension of the movement throughout the country, and of the success of the recent Exhibition at the Crystal Palace. An exhibition of co-operative productions was arranged in the Assembly Room (which included watches and chains of the Coventry Society), for which prizes were afterwards distributed. Mr. C. Shufflebotham, Secretary of the Coventry Watch Manufacturing Society, delivered an interesting address on "Profit Saving as applied to Productive and Distributive Co-operation," for which he received a vote of thanks, which was also accorded to the Society at the termination of the proceedings.

The Glasgow Exhibition.—The Executive of the International Exhibition in Glasgow have put themselves in a very awkward fix. One of the rules of the Exhibition was that nothing should be sold from the stalls for removal until after the close. Several firms disregarded this rule, and were brought to book in the Sheriff Court. The Sheriff Substitute granted an interim interdict against the continuance of these sales, and the offending firms appealed. The Sheriff Principal reversed the decision, on the ground that the agreement between the exhibitors and the Executive was a contract which must be stamped. He gave the Exhibition authorities two alternatives—to have all the contracts stamped, which would have cost £40,000, or to accept his judgment that the contracts could not be enforced without a stamp. As the Executive could not afford to lose such a slice of surplus, they had to make a lame retreat, with all the costs saddled upon them.

The Imperial Institute.—At a meeting of the Organising Committee of the Imperial Institute last month, Lord Herschell, the president, reported the result of a conference of the Commerce Sub-Committee with the representatives of the principal Chambers of Commerce in the United Kingdom and representatives of important technical associations held that day. His lordship stated that the general concensus of opinion was strongly in favour of the establishment of a Department of Commercial Intelligence upon the general principle of the outline scheme proposed by the Commerce Sub-Committee, which had been submitted to the consideration of the above-named bodies. Several very valuable suggestions were made by representatives of the Chambers and Technical Associations present at the Conference, and the view was unanimously expressed that the Department of Commercial Intelligence, if cautiously and judiciously elaborated, would be calculated to confer very important benefits upon the commerce and industries of the Empire.

A Little Out.—With reference to a paragraph in the Birmingham News of our August issue, the Canadian *Trader*, has the following under the above heading. "An item in the August issue of the English *Jeweller and Silversmith* says in its Birmingham News: 'The jewel case makers here are affected considerably by the loss of one of the Colonial markets. Canada, having put a duty of 60 per cent. upon all goods of this class going into port has quite closed the market to us.' This is hardly correct, inasmuch as the duty on such goods coming into Canada is not 60 per cent., but 30 per cent. *ad valorem* and 10 cents each specific duty. This duty was levied mainly with a view of keeping out the product of cheap German and French labour, and hardly interfered with the English makers, because very little of their goods were imported, the styles not being suitable for this market. The Hemming Bros. Company, the largest manufacturers of this class of goods in Canada, are now selling their product almost as cheap in Toronto, as the same quality and style of goods are sold in Birmingham by the English makers, so that duty or no duty, the latter would now find this market beyond their reach. This market demanded goods of American pattern, and, as the English makers could or would not fill the bill, one of our own enterprising firms took hold of it, and have made it such a success that they are now the equals of anything in existence in their particular line."

Under the heading "Cautions," the *Pawnbrokers' Gazette* says that rings of Marquise shape, set with blue glass or beryl in centre, small brilliants round, mount not marked, are being offered in the Midlands; £10 is asked, anything above £5 will be taken; they cost about £4. A double sovereign of George IV., 1823, and a 10-dollar American coin dated 1853, both mounted with a twisted wire forming a loop, and attached by a small gold ring, have been pledged in two instances this week in the neighbourhood of Oxford Street. The coins stand the test, but the double sovereign weighs 2½ dwts. less than a known genuine coin; the inscription on the edge is very imperfect, although in other respects it does not show signs of wear. It is also a trifle smaller than the genuine coin. While evidently fraudulent, it is at present not known to what extent either or both of the coins are base. As these goods may come into the hands of some of our readers in the way of "business," it may be well for them to be on their guard.

At a public meeting held on September 27, at the Prescot Town Hall, under the auspices of the Prescot Watch Trade Association, Mr. T. P. Hewitt, the President, made a presentation from the Committee to Mr. S. H. Hartley, clerk to the Prescot Union, of a handsome illuminated address, for the excellent services he had rendered in obtaining not only the support of the Prescot Board of Guardians, but especially for the labour and tact he bestowed on the Merchandise Marks Bill, and getting inserted what might be called the Prescot clauses, whereby not only the cases, but the movements of watches were protected and marked. The Chairman (the Rev. H. Mitchell) also presented Mrs. Hartley with a handsome gold keyless watch, of Prescot manufacture. Mr. Hartley, in thanking them, said he hoped that the Bill would not be allowed to remain a dead letter. The object of the Association is to promote the interests of the Prescot watch trade generally, and to see that no infringement of the Merchandise Marks Act takes place without action being taken to enforce it.

The Burglary at Munich.—Frank Bailey, alias Frank Buck, and William Davis, alias Billy Porter, were brought up on remand last month at Bow Street, under the Extradition Acts, charged with breaking into the shop of Mr. Thomas, jeweller, at Munich, and stealing therefrom money and property to the value of 96,000 marks.—Mr. Besley appeared for Davis, Mr. Gill for Bailey, and Mr. Mead supported the application for the extradition of the prisoners—Mr. Besley called James Collins, the uncle of Davis, to prove that the marriage of the parents of the prisoner took place in Cork. The object of this was to show that Davis was of British nationality, the contention of the prosecution being that both prisoners were Americans. If Davis is a British subject, by the treaty obligations Sir James Ingham has no power to surrender him to the German authorities. Both prisoners were remanded.

In reference to the above case, Chief Inspector Neame, was summoned before Mr. Vaughan to show cause why certain jewellery, value £150, should not be delivered up to Karl Thomas, jeweller, of Munich. Mr. Goldberg appeared for the complainant. Since an order for the extradition of the prisoners was made by Sir James Ingham, the prisoner Porter has appealed to the Court of Queen's Bench, and obtained his release, on the ground that, having been born at sea, on an English vessel, he was an English subject, and as such could not be delivered up to the German Government for trial in that country. The appeal was successful, and Porter is now at liberty. The property in question was found by Sergeant Froest and Sergeant Leach, of Scotland Yard, in the prisoner's possession. It consisted of manufactured jewellery, which was being worn by the prisoner's wife, and rough diamonds, which were found loose in the prisoner's hat-box.—Mr. Apps, who appeared for the prisoner, did not object to giving up certain articles sworn to by Sergeant Leach as being part of the proceeds of the burglary, but he did as regarded other articles of jewellery found in the prisoner's possession.—Mr. Vaughan ordered the property sworn to as part of the proceeds of the burglary to be given up to the prosecutor.

The Goldsmiths' Company's Institute.—The Goldsmiths' Company having had under their consideration the application on behalf of the South London Technical Institutes, and numerous other applications having similar objects in view, have decided that they can most usefully take part in the movement for establishing industrial and recreative institutes in various parts of the metropolis by identifying themselves with one particular institute. They will therefore hand over the buildings, with seven acres of land, at present occupied by the Royal Naval School at New Cross, for the purpose of an institute, and will set apart an endowment of £2,500 per annum out of funds over which they have control. The institute will be called the Goldsmiths' Company's (New Cross) Institute, and a scheme for its establishment will be drawn up at once. The value of this magnificent gift is about £85,000.

Astigmatism.—In cases of astigmatism, although there is great strain of the accommodation, the degree of the strain can no longer be measured by the total range of this faculty. In astigmatism the strain arises from the constant variation of the demand which has to provide in quick succession and with unchanged convergence for clear vision of those boundaries of figures which correspond with the chief meridians of corneal curvature. Supposing these meridians to be vertical or horizontal the patient in every act of seeing accommodates first for the vertical and then for the horizontal boundaries of the object, or vice versâ. The effect is even greater than that which would be necessary if the object—a printed page for example—were moved quickly to and fro before the eyes, because in such movement the convergence would be altered together with the accommodation. The effect of the varying accommodation will depend in some degree on the amount of variation, that is upon the grade of the astigmatism, but in even very low grades it is often beyond the powers of the normal function. When different forms of astigmatism are compared, Dr. Bucklin's experience is that the hyperopic form occasions more trouble than the myopic, the compound more than the simple, and the mixed forms most of all; but the difference between the susceptibilities of different persons is too great to allow any general rule of this kind to be laid down. Donders originally expressed the opinion that astigmatism, less than one dioptric, was scarcely disturbing to vision, but such a degree is certainly highly disturbing in some cases; and in every instance of obscure asthenopia any discoverable astigmatism, however small, should be corrected, more especially if it should be of the mixed variety. The correction of half a dioptric has frequently been followed by excellent results.

The Diamond Market.—The *Amsterdam* market experienced a slight but steady improvement throughout the month. There has been an increased demand for the better class of finished goods. In *Rough* and *Cleavages* the market continues very firm, with less enquiry for coloured stones. Factories are reported busy.

In *Paris* a favourable tone is prevalent. As usual, America is to the fore in purchasing, large parcels having been despatched to that account. Setters are fully occupied. The steamers, "Drummond Castle," "Moor," "Pembroke Castle," "Mexican," "Norham Castle," and "Spartan," brought moderate supplies from the fields during the month, and prices averaging easier, most of the current stuff found purchasers among the numerous buyers in the *London* market.

Latest *Kimberley* advices report a fair demand for all classes of goods, with slightly lower prices being offered for Bultfontein stuff.

Metals.—Latest quotations:—*Silver*—Bars, 43⅜d.; Mexican dollars, 42¼d. per ounce; market firmer. *Copper*—Chili bars, £78 10s. to £79, cash; G.M.B., cash, £77 17s. 6d.; English tough, £80 to £81; best selected, £81 10s. to £82 10s.; no speculation. *Tin*—Fine foreign, cash, Straits, £102 to £103; Australian, £102 12s. 6d. to £103 2s. 6d. *Lead*—Spanish soft, £14 5s.; English, £14 10s. sellers. *Spelter*—Ordinary brands, £18 10s. to £18 15s.; special, quoted £18 15s. to £19.; English soft, V & S, £19 10s. *Quicksilver*—Importers' price, £9 10s.; second hands, £9 2s. 6d.

Trade Notes.

Messrs. W. F. Evans & Sons, of the Soho Clock Factory, Birmingham, report a growing American trade for the better sorts of English clocks. During the last four years they have sent over 2,000 of their best clocks to South America.

Messrs. I. S. Greenberg & Co., of 44, Frederick Street, Birmingham, have issued a new catalogue. It contains the firm's price list to date of all kinds of gold and silver jewellery, and prices for repairing the same; prices for watch repairing and for re-plating and gilding; rates for the purchase of old gold and silver, &c.

Another simple contrivance has been patented to localise the damage of going-barrel watches, consequent on the breakage of mainsprings. It permits the rapid, safe and easy back-action of centre pinion with barrel, all other wheels and pinions remaining stationary, thus confining damage strictly to broken spring. It is applicable to watches already made, for a very moderate sum, and to watches in process of manufacture, by the inventor, Mr. Alexander Edwards, 88, Craven Street, Coventry.

Mr. Reid, of 184, Trongate, Glasgow, has just completed a creditable piece of work in the shape of a handsome silver salver weighing 120 ounces. It is for presentation to Colonel Montague Gilbert Gerard, C.B., of Rochsoles and the Bengal Staff Corps, along with a dressing case to Mrs. Gerard, by the tenantry and others engaged about the estate as a mark of their regard. It is very tastefully and elaborately chased, and bears an appropriate inscription surmounted by the family coat of arms.

The New Romney Mayor's Badge of Office, which was presented to that Corporation by Mr. R. R. Daglish, first mayor of the newly-created borough, last year, and was designed and supplied by Mr. J. N. Masters, of Rye, has recently had added to it the first link presented by the present mayor, Mr. Frederick Baker, supplied by the same maker. This link is prettily designed, consisting of a gold shield surmounted by a Mural Crown, matching the Badge. The shield is mounted on a square shaped link with cable ends, the obverse bearing the monogram of the present mayor, "F.B.", enamelled in blue and red letters, and engraved on the reverse side is a facsimile of the autograph of the donor "Frederick Baker" with the date "1887" under it.

Casket for Lord Brassey.—The Municipal Corporation of Hastings has presented Lord Brassey, formerly M.P. for Hastings, and a liberal benefactor of that town, with the honorary freedom of the borough. The ceremony of presentation took place on Monday, October 15, in the School of Art building at Claremont, which was the munificent gift of Lord Brassey to the town. The Mayor, Councillor Stubbs, afterwards entertained his Lordship and the members and officials of the Corporation with a banquet at the Queen's Hotel. The document setting forth the resolution of the Council, passed on August 18, to confer the freedom of the borough on Lord Brassey, was placed in a casket of solid silver, manufactured to order of Mr. E. Dobell, jeweller, of Robertson Street, Hastings. It is surmounted by the arms and crest of Lord Brassey, in silver and enamel, with his Lordship's motto, "*Arduis sæpe, metu nunquam.*" On the front of the case are the borough arms, also in silver and enamel, with Lord Brassey's monogram, surrounded by oak and laurel wreaths. Introduced in the wreath, from which the borough shield protrudes, are anchors and tridents, symbolical of the British Navy. At each corner, the box is supported by a silver pillar, on which is a lion rampant gilt, and below is a silver dolphin. On the opposite side is a wreathed inscription, to the following effect:—"Presented to the Right Hon. Lord Brassey, K.C.B., by the Corporation of the Borough of Hastings, October 15, 1888." The size of the casket is considerable, and its weight is about seventy ounces. It is enclosed in a large case, lined with light blue satin.

Official Chain for the Mayoress of Lewes.—In our description of this chain (illustrated last month in our Trade Notes), we referred to it as being made "by the same firm," in reference to a preceding note. As this might not convey much on a hurried perusal, we now give the name of the firm in question, being Messrs. T. & J. Bragg, of Birmingham.

Some time back we noticed in these columns the watches having the photographs of various celebrities on the dial, manufactured by Mr. Joseph Vickers, of Chapel Street, Coventry. We now see that the sporting and other papers have taken up favourably the novel idea, and the maker informs us that he has received approving letters from eminent personages represented, and that there is already shown a favourable demand on the part of the public for the innovation.

Birmingham News.

From Our Correspondent.

There are marks of increased activity among the Birmingham trades that are certainly very encouraging. Most of the jewellery branches report better business, and workmen are correspondingly scarce. Among better class mounters there are several vacancies and no workmen forthcoming. These are good signs of better times and should tend towards firmer prices and shorter credit.

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A branch of the trade that is just now extending is hall-marked 9-carat gold work, several firms being busy at this class of goods in brooches, earrings, &c., and as they are a class of goods that can be done cheaply, and with an appearance almost equal to coloured gold, they find a ready sale.

* * *

The gem ring makers are in a fairly flourishing condition; some of them have orders that will last them, with their present complement of hands for some two months, and as they cannot find extra men good enough for the work, it is not likely to be rushed into the market, with short hours afterwards as the inevitable consequence.

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It is generally known that Birmingham sends her goods to all the markets of the world, but it will be perhaps a surprise to some of our readers to know that Birmingham supplies the Indian market with fine 18-carat gold wire for the use of their celebrated filigree work. One of our local bullion dealers assures me that they draw and send away large quantities to India for this purpose.

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The Electric Light is progressing in Birmingham; the large and handsome range of shops and office just finished building in Corporation Street, is, I understand, to be lighted throughout by this method.

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The increasing fashion for waist buckles of a renaissance style of ornament (a class of work that has been principally supplied to us from France) has set our die sinkers thinking and working in order to get their share of orders, and they have succeeded admirably. A glance through the patterns of Mr. N. Allsop, 89, Spencer Street, shows some resources both in design and execution that will compete with the French both in price and quality.

The Brussels Exhibition Awards.—Messrs. Chubb & Sons (locks and safes); Gillett & Co., Croydon (clocks and bells); John Harrington, Coventry (patent tubular bells); and Joseph Morton, London (cutlery), have each been awarded the gold medal; and Chubb & Sons and Joseph Haywood & Co., Sheffield (the latter for cutlery), have received diplomas of honour at the Brussels Exhibition.

Board of Trade Returns.

The clocks and parts thereof imported during September are valued at £31,562, and in the same month of last year the value was £33,772, and in that of 1886 £31,179. The following shows the sources of supply:—

	1886	1887	1888
From France	£15,028	£15,763	£13,718
„ United States	£6,820	£9,393	£5,616
„ Other Countries	£9,331	£8,616	£12,228

For the nine months of this year the clocks imported have amounted to £320,123 in value, in comparison with £278,540 for the same period of last year, and £269,280 for the same months of 1886.

The watches and parts thereof imported last month are valued at £48,228, against £56,252 for the same month of last year, and £69,349 in the September of 1886. The nine months of this year show a record of £446,145 in value in comparison with £538,882 for the same period of last year, and £493,955 for the same months of 1886.

The plate and plated and gilt wares exported during September reached the value of £30,366. In the same month of last year it was £29,878, and in the September of 1886 £36,520. The exports during the completed nine months of this year are valued at £266,885 in comparison with £215,554 in the same period of last year, and £254,309 in that of 1886.

The imports of all descriptions of goods for September are recorded as £28,414,372. For the same month of last year the value was £27,191,594, and in the September of 1886 £28,898,505. The nine months of this year give a total of imports in excess of the same periods for the preceding years, the figures being—for 1886, £256,502,549; 1887, £264,437,010; and 1888, £278,622,431.

The exports for last month show a small falling off in comparison with the same month of last year, when the figures were £19,833,830, against £19,603,660 this year. The September of 1886, however, only showed a record of £18,928,975. The exports for the past nine months amount to the value of £174,231,542, in comparison with £163,099,414 for the same period of last year, and £159,515,970 for the same months of 1886.

The Morgan Collection of Watches.

BEQUEST TO THE BRITISH MUSEUM.

We referred last month to the death of Mr. Octavius Morgan, and are now able to give details of his collection left to the British Museum. The extract is from the *Athenæum*.

"The bequest received by the Department of British and Mediæval Antiquities under the will of the late Mr. Octavius Morgan (see *Athen.*, No. 3175) will go far to complete several series in the Mediæval Section. Although Mr. Morgan's tastes were of the most catholic kind and were reflected in his collection, he was chiefly known as an authority on the subject of ancient clocks and watches, and during 50 years of his long life he expended much time and money upon the formation of the unusually fine series of these objects which he has generously bequeathed to the British Museum. The bequest comprises 50 clocks, 126 watches, 63 sun-dials, and other instruments, as well as a series of 76 chamberlains' keys and 23 Papal rings. Among the dials are two astrolabes—one of Saracenic work, made in the year of the Hegira corresponding to A.D. 1334, the other a much later instrument, by one of the German makers of the seventeenth century. It is a somewhat curious fact that the first of these was made within a few years of an English specimen already in the Museum, inscribed 'Blakenei me fecit 1342,' and is therefore of the time of Chaucer, and may have been seen by him before he wrote his treatise on the astrolabe. The other dials are all of much later date, and for the most part of German construction, from the hands of the well-known makers, Reinman, Troschel and Rugendas of Augsburg and Nuremberg. One only is signed by

Humphrey Cole, a London artificer of the latter part of the sixteenth century, whose work is characterised by delicate engraved scrolls of the style found on the communion cups of the period. A vertical dial in the form of a gilt Corinthian column is a good example of the better class of German work of the same century. The column is surmounted by a globe, within which is a compass; the gnomon projects beneath the capital, and the hours are marked by curved lines upon the column itself. The base is engraved with a dedicatory inscription stating it to have been made as a New Year's gift in 1593. The whole design is admirably conceived and of graceful proportions. It is singular that among the whole of Mr. Morgan's collection there is but one dial, made at Rome in 1585, that can be ascribed to an Italian hand, and that not one of the clocks or watches is of Italian workmanship. Germany, France, England and Holland occupy the whole field, Switzerland coming in at a comparatively late date.

"Mr. Morgan was much interested in the changes that took place in the internal mechanism of clocks, and was not entirely governed in his purchases by the variety of external form. The collection includes several good specimens of the horizontal or table clocks, which were practically watches on a larger scale, having neither weights nor pendulum. Several of these are provided with an alarum contrivance to be placed over the clock and removable at will. A rod projected from the base of the alarum, its point being placed at the hour desired, and the bell was rung on the hand of the clock encountering this obstacle to its progress. This apparatus was generally turned to account to render the clock more ornamental, the dome which covered the alarum and the legs supporting it being susceptible of great variety of form and decoration. Among the smaller clocks various in shape and movement as they are, none rivals the ingenious instrument in the form of a ship, made for the Emperor Rudolph II., which Mr. Morgan presented to the Museum several years ago. Even this is surpassed, however, by the elaborate clock made by Isaac Habrecht, who, with his younger brother Josias, constructed the mechanism of the famous clock at Strasburg. Isaac Habrecht made at least two miniature copies of his masterpiece, in both of which the leading movements of the original were reproduced. One of these is in the Rosenborg Palace, and bears his name and the date 1594; the other is Mr. Morgan's specimen, also inscribed with the name of Isaac Habrecht, "Faber automatarius et civis Argentoratensis," and the date 1589. As the Habrechts were of Swiss origin, it is possible that the citizenship of Strasburg may have been conferred upon them as an honorary distinction on the completion of the great clock. The phrase occurs also on the Rosenborg clock, though in German.

"The clock is in the form of a square tower of gilt metal, in three stages, the lower two being provided with dials, one of them a perpetual calendar. The upper stage has four semicircular balconies, upon which revolve a number of figures, the first set being the gods presiding over the days of the week, the next a circle of angels who make a reverence in passing a figure of the Virgin; above, four figures representing the ages of man strike the quarters, and the upper range has a figure of our Lord on one side, and Death on the other, to strike the hours. The dome is surmounted by a cock, which, upon the stroke of the hour, is intended to crow and flap its wings. All these automata were likewise upon the original clock at Strasburg; but at its restoration, in 1842, some alterations were made, and it is possible that they do not now all exist.

"In his "Classification of Watches" published in the *Archæological Journal*, Mr. Morgan gave in some detail his reasons for dividing ancient watches into four great classes, each representing approximately a period of time, fixed by certain peculiarities of construction. It is a condition of his bequest that the watches shall be kept as a separate series, arranged upon his system, and they have accordingly been so arranged, in a case close by that containing the very fine collection which the Museum already possessed, chiefly bequeathed by Lady Fellows. As a rule a condition of this kind is apt to diminish the educational value of collections, by keeping apart series, which, if united, would form a continuous history of the subject illustrated. In the present instance this is less harmful than usual; the small size of the objects, and the ease with which they can be arranged in close proximity to others of the same kind, render comparison a matter of no difficulty.

"It is not advisable to give here any detailed account of the changes and improvements in mechanism which took place in watches from their first appearance at the beginning of the sixteenth century. Lady Fellows's collection contained a considerable number of watches made before the end of that century, and although in some instances Mr. Morgan's specimens are in better condition, and form a useful supplement to the Museum series, yet it is not until we come to the middle of the seventeenth century—the period of the brothers Toutin and Huaud le Puisné, the enamellers—that we find a class of work before unrepresented. Some of the examples of these skilful artists are masterpieces and in the most perfect state of preservation. Two watches are from the hand of Edward East, who worked for Charles I., and another is stated to be that mentioned by Boswell as having belonged to Dr. Johnson. As to this last Mr. Morgan was somewhat sceptical, and the inscription upon it, "Dr. Samuel Johnson, 1767," does not help its authenticity.

"The gilt chamberlains' keys make a brave show, and form an interesting little historical series, and from the artistic side also many of them are worth attention. Those of the Georgian era, and the more massive style affected by the Prince Bishops of Bamberg and Würzburg, might be studied with advantage by the designers of this class of work. Of the Papal rings there is little that can be said, for but little is known. They seldom have any claims to beauty, though from their historical interest and their rarity they are greatly desired by ring collectors. Small as the number may seem, Mr. Morgan's collection was the largest in existence, containing a few more specimens than even the Waterton collection."

Machine for Counting Wheel Teeth.—In our July number we noticed the offer of the New York firm, R. & L. Friedlander, of a cash prize for the best machine for counting the number of teeth in watch wheels. It was hardly to be expected than many inventive watchmakers would respond to an offer of this kind, but up to the time limited, R. & L. Friedlander received many letters and about five or six schemes. All but four were ruled out of the competition as being utterly unpractical, and these four received the judgment of a committee of well-known watchmakers on September 22. The committee was composed of Messrs. H. H. Heinrich, Charles. S. Crossman and Louis Brüggeman. There were present a representative of of the "*Jewelers' Circular*" and half-a-dozen reporters of the New York daily press. The first thing considered was an elaborate machine in brass and steel from Mr. I. Herrman, of the Polytechnic Institute, London. This machine was a careful and intricate piece of work and was much admired, but it was regarded as being too complicated and too hard to work. The next was an elaborate design and description from Mr. C. Roller, of Geneva, Switzerland. A translator was at hand and the description created much interest, and if Mr. Roller had sent a machine, his chance of obtaining the prize would have been better. A little nickel gauge was sent by Mr B. R. Jolly, of Raleigh, N. C., which counted the teeth of the wheel by clicks, and this instrument was extremely simple; but as no time or labour was saved in the operation it was not available. The last machine was one from Mr. E. L. McKenzie, of Elkhorn, Wisconsin. It was a queer looking instrument of iron or steel, with a large, corrugated wheel. At one end of the wheel, which is about an inch-and-a-half wide, is a disc with the numbers registered upon it, and the teeth fitting in the corrugations are thus counted upon the register. The machine sent is rather crude and needs several improvements, but in the mind of the committee it was the best instrument received. Accordingly, R. & L. Friedlander have awarded the prize to Mr. McKenzie. The improvements necessary in his machine to make it perfect are very slight, and when adopted it is likely that it will work very satisfactorily.

St. Michael's Bells, Clock and Chimes, Coventry.

THE difficulty of successfully constructing a tower that shall permanently withstand the vibration of large chimes of bells, and of suspending the bells themselves, are a problem that has long exercised the minds of clockmakers and their allies.

In this connexion the following paper, just published, from the pen of Mr. Councillor Andrews, which was presented to the sub-committee appointed to consider the question of the bells, will be read with interest:—

The working or sub-committee of St. Michael's restoration having desired my opinions on the question of dealing with the bells, clock and chimes, the following memorandum contains my views upon the subject:—

(1) All the four professional men who have given opinions upon the matter, are unanimous that the bells cannot be replaced and rung in the ancient tower with safety to its fabric. These are Mr. J. O. Scott, Mr. Pearson, Lord Grimthorpe and Mr. J. Thomson, the contractor. The last of the above is very emphatic on this question, and it is obvious that he has had better opportunities of knowing the state of the steeple than the previous three put together. To the above I may add the opinion of the Rev. Canon Cattley, of Worcester, who is a recognised authority upon bells and bell towers, and who is well acquainted with St. Michael's steeple (see note 1). To this I may add that the steeple is a yard or so out of perpendicular, a fact which was unknown to some of the above-mentioned professional gentlemen when they gave their opinion.

(2) So far as I know, the views of all the amateurs who have given their attention to St. Michael's steeple coincide exactly with the above professional opinions. It may be pointed out that these amateur opinions are not based upon the professional views, on the contrary they were formed from independent investigations previous to the professional views becoming known.

(3) So far as I can discover, one professional opinion only, that of Mr. Pearson, has been given that the bells might be safely replaced and chimed in the ancient steeple. By chiming I mean of course the method of swinging the bells just sufficiently to make the clapper strike, but without raising the bells. Against this I may set the opinion of the Rev. Canon Cattley, who thinks that chiming would cause much vibration and would be risky to the steeple.

(4) The views stated in the three preceding paragraphs were considered so conclusive that the general restoration committee unanimously adopted them on January 13, 1886, and passed a resolution that the restoration of the steeple should be completed strictly according to the contract and specification already entered into.

(5) The clearest possible evidence exists that the steeple was never built or intended for either ringing or chiming, but only for bells not to be swung but merely to be struck with hammers or clappers. History mentions that bells were placed in the steeple in the year 1429, viz., before the spire was built, and some writers have given an opinion that the bells were placed in the fourth stage of the tower, that is to say above the groined vault, and that they were chimed by ropes reaching to the floor of the church 100 feet below. This, however, is a mistake. Where, then, were the bells placed? An examination of the steeple shows that they were placed in the octagon. The holes in the walls in which the bell beams were fixed still remain inside the octagon, but no traces of any such holes can be found in the top stage of the tower. This shows that the fourth stage of the tower was for the men who played the bells, whilst the bells themselves were in the octagon above. The bells could not have been swung or they would have brought the octagon down.

(6) Coventry possesses three peals of bells, but at present none of them can be rung, and only one peal can even be chimed. This is from the same cause in all cases, namely the weakness of the towers. I am old enough to remember the time when the stair turret of the tower of St. John's Church had to be pulled down to prevent it from falling, as it was so badly cracked. It remained down for some years, but has since been re-built. The bells here are sounded by ropes tied to the clappers which are banged against the inside of the bells, the bells remaining steady. The peal of Holy Trinity Church is in a similar condition; these bells are also clappered, and the tenor bell has been cracked by this means. It is by no means uncommon for clappered bells to become cracked. My view is that the citizens of Coventry will not be satisfied unless there is one peal of bells in the city which can be rung in full peal, and this should be the best peal, namely that of St. Michael's. It will therefore be seen that there is only one real solution of this question, namely, to build a new bell tower and to build it strong enough for its work.

(7) In considering a new bell tower, the first question to be decided is its site, and whether it should be quite detached from or joined to the church. Some persons imagine that detached towers are very improper and quite unorthodox. Others think that a new detached tower would in some way or other interfere with the appearance of the old steeples. But the following list which I have compiled of a few of the churches in England and Wales, which have detached towers, will show that they are common:—

Bedfordshire	Elston
,,	Marston Morteyne
,,	Woburn
Cornwall	Mylor
,,	Gunwalloe
Devon	Chittlehampton
Denbighshire	Henllan
Gloucestershire	Berkeley
,,	Westbury
Glamorganshire	Llangefelach
Herefordshire	Ledbury
,,	Pembridge
Lincolnshire	Fleet
,,	Flixborough
Norfolk	West Walton
,,	East Dereham
,,	Torrington St. Clement
,,	Walton
Northamptonshire	Irthlingborough
Sussex	Chichester
Suffolk	Bramfield
,,	Beccles
,,	Bury St. Edmunds
Warwickshire	Lapworth
Worcestershire	Evesham

There are at least six more in Cornwall, but I do not know their names. I have seen several of these detached towers, and have not seen anything unsatisfactory in their appearance. The Evesham tower is a very noble one, and stands in the same churchyard with two churches which have steeples. But perhaps the one which may be best compared with Coventry is that of Chichester Cathedral. This cathedral has a steeple nearly 300 feet high or about the same height as St. Michael's. The bell tower, 120 feet high, stands in the cathedral yard on the north side. Yet I have not noticed that it interferes in any way with the steeple.

(8) Many persons have stated their opinion that a good site for a detached bell tower would be in the churchyard avenue with an archway through it for the footway. Some have thought that the top of the avenue would be the most suitable site. I am of opinion that the top of the avenue would not be suitable as the noise of the bells would, I think, be objectionable to the Free Library. At the lower end of the avenue the noise might be objectionable to the Provident Dispensary, &c. Also to bring the bells up to the old level a tower at the bottom of the avenue would require to be higher and consequently more costly. It has therefore occurred to me that an intermediate site might be suitable as represented on the two annexed plans. In either of these positions the tower might at some future time be joined to the church by a short north transept which might perhaps serve as an organ chamber. (See note 2.) Such transept towers are not uncommon, and the organ is very often placed in a transept—as for instance at Worcester Cathedral. The site suggested on these plans would be more distant than the ancient tower from St. Mary's Hall and from the Free Library and from the courts of justice.

(9) If it should be decided that a new bell tower should be built entirely and permanently detached from the church, then I am of opinion that it would be best some distance away and the corner of the churchyard opposite Priory Street seems to be a likely site. Plan 3 (See note 3.)

(10) Size and weight of a new bell tower. I am of opinion that the following dimensions would be suitable for such a tower. Base of tower including buttresses 50 ft. square. Side walls about 9 ft. thick at base, tapering to 6 ft. at top. Height to roof 95 to 105 ft. according to position of tower. Ringing chamber 20 ft. square. Clock and chimes chamber of same dimensions. Bell chamber 21 ft. square. Such a tower would weigh between 7,000 or 8,000 tons according to the material with which it was built. Although only one-third of the height of St. Michael's steeple, its weight would consequently be much heavier.

(11) I have made the enclosed section for a tower of the above dimensions which I think would be suitable for sites No. 1 or No. 2. It is constructed upon the supposition that the clock would be illuminated at night (possibly the Corporation would find gas.) There is a passage through it of 12 ft. wide for the avenue. Mr. J. Oldrid Scott has since prepared an architectural design to match this tower which I enclose (see Note 4.)

WILLIAM ANDREWS.

May 21st, 1888.

Note 1.—The opinion of the Rev. Canon Cattley—which he kindly permits me to quote—is as follows:—"If the recent work only includes a re-casing of the old without any additional buttresses, it would be folly to place the bells as before: the thrust of that heavy weight of metal is enormous—the old troubles would again soon show themselves, and the same anxiety would ensue. If that splendid offer towards a new bell tower still holds good, I hope the authorities will accept it."

Note 2.—The tower of Fountains Abbey is in such a position, also there are several churches in Somerset with transept towers. Exeter cathedral has similar towers.

Note 3.—Since the above was written a site has been suggested which I think is well worth considering, namely, in the centre of the churchyard, exactly opposite the north door of the church. There would then be an archway under the tower, with a walk straight through it from the north door to the middle of Priory Row.

Note 4.—This design is not the one recently published in the *Builder*.

The Universal Exposition, Barcelona.

From our own Correspondent.

ALTHOUGH late in remitting you this report, the circumstance is not altogether unfortunate; as at the actual moment the premier Iberian International is at its supreme best, and receiving, by the thousand, visitors from all parts—British and American tourists notably figuring. When the great show will close is not exactly known yet: some saying in a few weeks, and others that the Universal will remain open until January next—with which latter opinion the writer is disposed to concur.

As might be anticipated, France comes out strongest in the magnificent display of jewellery encountered in the mammoth edifice known as the "Palace of Industry." A goodly number of Paris houses contribute some of their best lines; yet it cannot be remarked that any decided novelty is to be met with among the fine, dazzling lot of goods. The truth is that, converse with any exhibitor, he will inform you that manufacturers have not considered it worth their while to go to any pains over the Universal—an affair which promised to be a mere forerunner of next year's Universelle, in the capital of France. They are reserving their best energies for the mighty International of little more than six months hence, when they are determined to create wonders by putting forth the ideas held back for a long time until the arrival of the forthcoming opportune moment. May the home merchants contribute an assortment of the articles pertaining to the trade represented by the journal for which this effusion is penned that will reflect honour upon the craft of the United Kingdom!

It would be impossible to convey in a short space any good idea of the several splendid exhibits of jewellery made by reputed dealers in the neighbour republic. They have a section to themselves, the following names constituting an accurate, complete list:—Georges Brunet, rue de Rambuteau 26, Paris; Albcrt Brunet, rue St. Maur 161; C. Bourctte, boulevard de Sébastopol 100; G. Bonelli, avenue des Ternes 43; Biais ainé et Cie., rue Bonaparte 74; A. Bénard, cité du Petit-Thouars 8; J. M. Beer, rue Saint-Sulpice 34; L. Bandet fils., rue Vielle-du-Temple 119; Salomon Asafranc, local French merchant, resident at calle S'ta Madrona 12, 1°, 4ª, Barcelona; Emile Angles, rue Charlot 31, Paris; Mons Angenot, rue Chapon 18; G. E. Jacta, rue du Quatre-Septembre 26; A. Jacquin, rue de la Perle 5: Gustave Froidefon, rue Michel-le-Comte 34; Amcdée Fornet, Bourg-en-Bresse, department Ain; Edouard Fouilhoux, rue Pastourelle 17, Paris; Dréville et Labie, rue du Temple 134; Alphonse Dècle, rue de Quatre Fils 22; Christofle et Cie., rue de Bondy 56; Chopard fréres, rue Chapon 35; Charlot frères, rue Montmorency 5; N. Charguerand, rue de Turbigo 64; Jean Charles, rue de Cygne 17; Mons. Carbonneaux, rue Chapon 5; A. Caillat, rue de Turbigo 64; N. Çailar Bayard et Cie., rue Grange-aux-Belles 37; Mons. Bunon, rue Montmorency 18; Adeline Lacombe, boulevard Voltaire 119; Frédéric-Auguste le Double, rue Thévenot 19; Mons. Lefevre, rue Fontaine-au-Roi 5 (bis); Edmond Lucy, rue du Parc-Royal 8; Théodore Lusigny, boulevard de Strasbourg 7; Georges Michel (chez Collonp frères), rue de Lancry 56; A. Nobile, rue de Marseille 14; Léon Pernier, faubourg du Temple 99; Charles Picard, rue des Gravilliers 19; veuve Léon Piel, rue Notre-Dame-de-Nazareth 52; Plichon et Cie., rue du Parc-Royal 10; Alphonse Pochiet, rue du Chaume 3; A. Regad fils, rue de Turbigo 53; Emile Robin, rue Notre-Dame-de-Nazareth 37; Rouvenat et Després, rue d'Hauteville 62; Gustave Sandoz, Palais-Royal 147, 148; Charles Scheidel, rue de Castiglione 1; Léopold Schetz, rue Charlot 62; Sardoillet père et fils, rue Notre-Dame-de-Nazareth 6; Paul Soyer, rue Saint Sauveur 4 (bis); Hippolyte Peterger, rue Saint-Augustin 31; Eugène Thomas, rue de Turbigo 56; Albert Turpin, rue du Temple 191; Pierre Ucciani-Bégard, rue Michel-le-Comte 22; Union Co-opérative des Ouvriers bijoutiers en doré, cité du Petit Thouars 12; Alexandre Vaguer, rue du Temple 114; Vuillermoz et Mangin, rue de Poiton 15; Frédéric-Félicien, boulevard Barbés 11.

In clocks and watches several firms make excellent displays. Notable is the remarkable stand of *montres* of Armand Schuob et frère, boulevard Bonne-Nouvelle 19, Paris, and at rue Léopold-Robert 14; Chaux-de-Fonds, Switzerland (represented in Spain by a señor resident in the immortal city of Zaragoza—one Genaro Baringo. The goods are in great variety, carefully put up, and reflect honour alike on producers and actual exhibitor.

Raphaël Gaubert, rue de la Pomme 42, Toulouse, has exposed a number of capitally made and elegantly finished clocks, which, on the score of good time-keeping merits, have carried divers honours in different Expositions.

Léonce Delarocque, rue Saint-Quentin, Havre, and Léon Girod, Morbier (Jura), are a further couple of provincial monsieurs making creditable shows of domestic (in a multitude of forms) and travelling clocks.

Your correspondent would refer, in passing, to the improved eye-glasses of Mons. N. Korshunoff, a civil engineer of rue Chazelles 37, Paris, who exhibits well in one of the interesting French sections, having also a case in the Russian Division (and at the moment, let it be parenthetically added, likewise showing off at the Brussels International and at the Palais de l' Industrie (Exposition de Sauvetage et d'Hygiene), in the gay French capital.) The spring pincers, in two pieces, are movable in or out, and can be closed into a compact space, without fear of injuring the crystals. They are the ideal of perfection.

P. Ovtchinnikoff fils, Moscow, have a beautifully fitted-up ease of gold, silver, and plated work, of most artistic design and elaborate finish, in the shape of ornamental boxes of various sizes, mugs, saltcellars, plates, soup tureens, mirrors, candlesticks, napkin-rings, bells, &c.—a fine lot.

A further Russian exhibitor is C. T. Woerffel, of St. Petersburg, who, however, but makes a small creditable show of bronzes.

G. H. Hallberg, of Stockholm (represented in Barcelona by Nordbeck and Braune, calle Cristina 7), has a most worthy exhibit of jewellery—such silver and gold goods as necklaces, pins, and similar articles. Finest, however, are the several large mugs, with lids, the cutting upon which is absolutely without equal in the Exposition: such splendid chiselling merits the earnest attention of all visitors.

Passing through the small British section, only one stand—and that of indirect import—can be seen here. Reference is made to the Potosi Silver Manufacturing Company, of Birmingham, who show a number of spoons and forks, &c., of divers classes, made out of that singular white metal. Polli y Guglielmi, calle Barbará, 16, 2°, Barcelona, are the agents.

The following stalls are held by citizens of the Ottoman Empire, who put forth a goodly number of articles of a miscellaneous nature: Elias Aboukalil, Jerusalem; Richara Michel et cie., Bethlehem; Abdallah Michel, David Salman, Jorge Yssa Cattan, Jacobo Sabat, Gabriel Habach, and J. Abufhete—all of the sacred city.

Little Switzerland has a correspondingly little section, with few stands. Paul Bach, of Geneva, has a small display of gold rings (being represented by F'co Layret et Cie., of this city); and the house of B. Haas, of Jeun, have remitted a handsome assortment of clocks and watches. The novelty about the latter is that no key-winding or screw-turning is necessary: the act of opening and closing the dial case winds up the spring. Both classes of goods have scored numerous honours in different exhibitions. They were made at the manufactory in Geneva, quai du Mont Blanc 5, and are furnished wholesale from the Paris house, at boulevard Sébastopol 104.

Of North American exhibits there are half-a-dozen. C. Lugano, Kingston, New Jersey, shows spectacles, opera glasses, &c.; W. D. Chase, New York, several small alarum clocks, of various sizes and designs; W. S. Hough, Jun., Providence, Rhode Island, some scores of lockets, in great dissimilarity, made of aluminum; Seery Manufacturing Company, Providence, many dozens of watchguards, made in all possible manners, constituting a brilliant, although small representation; Self-Winding Clock Company, New York, four large-size clocks of handsome construction; Manhattan Watch Company, New York, a couple of round cases containing aluminum and nickel watches located on a big stall adorned with four clocks, (also the concern's productions), the effective exhibit looking well below the attractive canvas of the Giant Tree of California, through which a wagon-and-six are represented as passing. Lastly may be paragraphed the good show-off of bronzes made by the American Manufacturing and Supply Company, New York.

Italy comes forward very fairly as an expositor of valuable metal-ware. L. Savona, of Naples, makes a pretty show of bracelets, brooches, hairpins, and such like. E. Montani, via de la Croce, Rome, shows earrings, bracelets, mosaic bracelets, oxidised silver rings, and many other neat little articles. L. Caramanna, Naples, has a number of scarf-pins, bearing the eccentric figures for which such objects are noted—cockerels, fish, moons, clowns, geese, violins, crocodiles, &c. Bargigli e Grazzini, Borgo S. Jacopo 4, Firenze, has, like numerous others, two stands in the "Palace of Industry," there being one in the "Gallery of Work." This signor makes a speciality, it would seem, in bracelets, for we see them in beautiful and exceeding variety. Fiorenzo Rigotti, via Roma, Genoa, exhibits some specimens of chiselling upon silver, the delicate working upon fruit-dishes, inkstands, and models of steam and sailing vessels being exquisite in the extreme. Oliva Pietro, Milan, has a handsome case of spectacles and eye-glasses, the crystals being blue, green, black (or smoked), and plain. Cristoforo Chidini, of Brescia, exhibits a large gilt clock, "dedicated to Her Majesty the Queen-Regent." It is lodged in a harp, surrounded by beautiful scroll-work, and crowned by the head and stâr of Liberty. The work upon the affair is of extreme beauty,—a remark applying also to the two splendid urns either side. Constantino Calvi, of Rome, and Vannini é Frullini, of Firenze, are a further pair of Ligurians creating dignified stands. From the Fonderia Nelli, of Rome, and from Pierson fils some pleasing bronzes are on view.

Perhaps the handsomest clock display in the International is that of L. Enzkirch, of Baden. There are seventeen instruments, varying from that for hall to the timepiece for mantelshelf. Maurer y cia., calle de Escudillers 62, are the agents.

It is another Teutonic firm too, which makes one of the first plate displays. Koch und Bergfeld, Bremen, have indeed a magnificent installation, loaded with massive flower-stands, jugs, candlesticks, urns, dishes, teapots, and elegant sets of spoons in costly cases. Some Madrid señors represent—Eduards Levy y cia.

Otto Kästner, Crefeld, Germany, have some clever work in copper and brass, which is fully worthy of this passing mention. Agented by Schomburg, Caballero, y cia., of the Spanish capital.

J. R. Gerlitzky, whose affairs are with the Comisión Austriaca in the Exposition, exhibits an extensive assortment of ladies' fancy jewellery—covered with stones of a deep red colour—imitation carbuncles, doubtless.

J. Reïmann, Prague, and Ludwig Politzer, vi Papagenogasse 4, Vienna, make similar exhibits.

A Viennese general merchant and jeweller is C. Lux, that herr having a first-class exhibit of silver, nickel, and bronze ornaments for table and desk use ; and Josef Frank, of the same capital, also shows well in a like respect ; while a neighbour, R. Pohorschelek, comes up well in a nearly similar display of goods.

Goldberger and Söhne, Vienna, have a valuable plate exhibit. There are gold and silver-plated breakfast and dinner services, put up in valuable gorgeous cases. José Inwald, of Praga, Böhmen, also has a first-rate set. So has Franz Wagner, of Ulrichsthal, who has a business-like informant in F. Arnalich, rambla de Cataluña 27, Barcelona.

Jaime Trilla, calle Fernando vii 41, 2°, in the capital of Cataluña, has the finest watch exhibit of any Barcelona house. The señor named possesses an important watch factory at Tavannes, Switzerland, where his goods are turned out to a large extent. This is essentially a stand for the professional watchmaker to see; may be easily recognised by the figure so well-known, of old Time, which is located on roof of the entertaining, edifying *instalación*. We see here a truly magnificent show of watches, from smallest to largest sizes. At base of case are the ores from which the metals used in the construction of watches are obtained, and by them are small bars of pure gold, silver, copper, brass, iron, and steel. Parts of watches are in profusion around the fine stand.

Masriera hermanos, calle de Fernando 35, Barcelona, have an effective small division to themselves. We see in the big, sumptuous case some wonderfully-massive plate-ware, that would almost astonish even a Paris tradesman.

Luis Molas, calle Escudillers 6, in the city, exhibit an attractive, though small lot. Our attention is drawn to the stand by that portly figure of a grinning nigger, who wags his head gleefully so long as the watch, stuck in his corporation, is wound up. A triplet of watches lying round are worth a second's noting. One contains works to indicate the dates of the year, while another shows the hour in seven cities of the world when it is midday in Barcelona—all crowded into a trifling pocket watch.

The sons of F'co de A. Carreras, of Platería 9—11, Barcelona, have a truly magnificent installation in the vicinity. The great jewellers make anything from a scarf-pin up to immense services for the tables of grandees. It would be impossible to see a more varied exposit.

Alfredo Gaza, Escudillers 54, Barcelona, has a fine lot of goods, doing the maker all honour.

The señor Némitz, in the Belgian section, makes a very good display of jewellery, of a manifold nature.

In the "Sección de Ciencias," the great astronomical and geographical clock made by Alberto Billeter (in charge of José Ciervo Sinclair, Paseo de Isabel ii 2, Barceloneta) will always draw admirers. The extraordinary instrument, over which an interesting page could be penned, indicates the time in twenty-four parts of the world, and details more than you want to know about the solar and planetary systems.

Near by is another remarkable apparatus, with full practical illustrations of the solar system, invented and constructed by the professor Enrique Santadaria, of Martobell, Spain.

Influence of the Curb-Pins upon the Adjustment.

A CORRESPONDENT of the *Journal Suisse* writes :—

I desire to call attention to a cause of irregularity in the going of watches that I think has not yet been pointed out. I had for a long time observed that watches being adjusted made an advance every day upon the rate of the day preceding, but this however without presenting any regularity. Thus, one of these watches, after having commenced by making a daily rate of + 1'', made the second day + 3'', the third, + 4'', the fourth, + 3·5'', the fifth day, + 4·5'', and so on, so that, at the end of a certain time it arrived at a daily rate of + 12''.

Another example : the first day, the watch placed dial-up made + 1'', the second day, placed dial-down, + 3'', the following day, pendant-up, + 11'', and returned the fourth day to dial-up, it made + 14''.

After having vainly sought what could well be the cause of this acceleration, it occurred to me to put to one of the pieces which had a very considerable advance, a drop of oil between the curb-pins without absolutely touching anything else. The next day the watch, replaced in the same position, lost twenty seconds, and continued this rate the following days.

As I had supposed, and was enabled to convince myself by the result, the acceleration which I had observed proceeded entirely from a gripping produced by the to-and-fro movement of the spring between the curb-pins. It was there then that it was necessary to seek the fault.

In effect, in the manufacture, each uses for the curb-pins a metal of his choice. Some take brass, others *dardaine*, bronze, aluminum, or gold. As mine were some of *dardaine*, others of gold, I immediately changed them for simple brass pins. From that time I have never observed the least trace of the fault above referred to, which makes me think that with the steel spring (*), the best metal to employ for the curb-pins is brass. The other metals enumerated being harder, it may be concluded that the gripping is more considerable, because they have all caused the same defect.

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[*] It goes without saying that it will be useful to re-commence the trials with the palladium spring.

There was also a thing to consider: this is the polish of the lamina of the spring. This should be able to explain why this acceleration is produced sometimes more rapidly and strongly. While I am on this subject, I follow with a few observations that relate to it. Very often the curb-pins are made too fine, and this is wrong for two reasons. It is in the first place difficult to fix them sufficiently solidly, and it is known that if they are not well adjusted and rigid, regularity is impossible; besides they are too subject to be bent, and the repairer who does not know their importance, may leave them so, or not properly straightened, so as to entirely derange the adjustment.

On the other hand, in order to have the greatest regularity possible with a watch with index (*), it is necessary at first, as all watchmakers know, to have the spring right, free, without play between the pins. But nevertheless it is not necessary, as is sometimes seen, that it be held tightly between them. There is produced then in this case an irregularity, whatever be the metal employed, the same as with brass. In order to partially lessen the fault of too hard pins in *dardaine*, bronze, &c., the pins may be opened slightly, so as to give a slight play to the lamina of the spring. The gain produced then by these hard pins is much less considerable, the gripping or friction being probably diminished by this fact.

Aluminum Alloys.

THERE have been several announcements recently, both in this country and in England, says our Philadelphia contemporary, *Iron*, of discoveries of methods of producing cheap aluminum. Still, the new metal is not commercially cheap, nor have any of these discoveries so far materialised as to give to the world a supply of this wonderful metal. There is a concern operating quietly in Jersey City, the Williams Aluminum Company, whose office is at No. 95, Liberty Street, New York, which, without making any announcement of a discovery, are now producing cheaply two valuable alloys of aluminum and iron, one for use with cast iron and one for steel. The former is called aluminum-ferro-silicon, and the latter ferro aluminum. These alloys have already been widely used, and are proving of great value in foundry practice, and a considerable demand has sprung up for the product from iron and steel works in various parts of the country.

The statement is made that when this aluminum-ferro-silicon is used in the proportion of ten pounds to every ton of molten iron it greatly improves foundry practice. It is used in the ladle, and the metal is poured upon it without stirring. It cleanses the metal effectually by reducing oxides, and renders it very fluid. It gives life to the metal, raises its setting point and lowers its chilling point, so that castings take form quietly, while the thinner parts are not so apt to be hard and brittle, or cracked by shrinkage caused by sudden changes of temperature. Being more fluid, sharper castings result, and under the tool are found to be softer, and their strength is also increased.

The percentage of defective castings in any foundry is a vexatious loss, and as they are but scrap that has cost the price of the regular pig, there seems to be no doubt that this new alloy, which lessens this large percentage of loss to the founder and gives improvement in his practice, will find a large and increasing demand. This loss by defective castings was thus stated by a prominent stove concern, which had figured it: "Every piece of faulty casting takes the profit on eight pounds off of good castings to make the loss good!"

To lessen this loss, as well as to give sharper, stronger and softer castings, without blow holes, is the mission of this new alloy, and an important mission it is.

The alloy is sold for ten cents per pound, and its use in the very small proportion to the ton of iron named above, give results at such trifling additional cost that it will find its way to very general foundry use, and the announcement of it should be of interest to the entire iron trade of the country.

American Items.

THE manufacturers of clocks seem to have been heretofore largely indifferent to the advantages of a designer, and, regardless of the material employed, whether it be bronze, brass, spelter, marbleised iron, wood or marble, the design of the case is, with rare exceptions, unattractive and oftentimes offensive. The use of some of these materials is inexcusable. Imagine for a moment the condition of one's artistic mind who can discover anything even tolerable in a black marble case. For a disposition at all sensitive to uncongenial surroundings the presence of such an incongruous piece would be a constant irritation, a point to which the eye would unavoidably first direct itself. And yet that style came from France, supposed to be the home of frivolity and not given to lugubrious reminders of the flight of time and the posing of a gravestone on the mantel. To replace these forbidding objects I have recently seen, says a correspondent of the *Manufacturing Jeweler*, a tile clock, an idea of some time ago but now brought to a high point of beauty. The case is in delicately-hued tiles, bound at the corner with brass bars.

Another contemporary says that if the fall trade in general holds up to the promise of the early September days, it will be all that the most sanguine can expect. The summer, on the whole, has been rather remarkable for coolness, interspersed with a few intolerably hot days, the average being in favour of weather personally comfortable. As a consequence, business men have been more faithful to business duties than usual in the summer, and more goods were sold in consequence. Several firms in the Lane inform us that their sales this year have exceeded those of each corresponding month of last year, and that the September orders have been especially good. In the last days of August even, quite a number of buyers were in the city, and their purchases were liberal. All spoke well for the prospects for business this fall, and are preparing for a good demand. Manufacturers are fully prepared to supply new and desirable goods to any amount, and most of them have succeeded in producing some novelties for the fall trade. The outlook at this time is most promising, there being nothing in the way to threaten the general prosperity, if we except the usual excitement of a presidential campaign, and this has already been discounted.

The "New York Horological Industrial School" is open for the reception of students from Tuesday, October 2nd. The circular announcing the establishment of the school says: "The object of this school will be to supply the great and ever increasing demand for a higher grade of skilled artisans in these branches of industry. The school is chartered under the laws of this state, and plans are in progress for the establishment of a permanent national institution. No expense will be spared in making its facilities and appointments perfect in every particular.

"The school will be opened under the direction of Professor L. D. Jones, an expert of the highest order, and well-known to the watchmaking fraternity. Skilled instructors in all the branches will be secured from the leading European centres of the industry, as the requirements of the school demand. The ultimate plans will include, in addition to the industrial department, a laboratory, library, lecture room, museum, etc.

"Students must furnish all necessary tools, except lathes, at their own expense.

"Students may enter at any time, but it is desirable that they begin with a quarterly term."

Further particulars may be obtained by addressing the "New York Horological Industrial School," 35 East 23rd street, New York. This is an institution that there is an apparent demand for, and New York is as fine a location for it as there is in the world. The *Manufacturing Jeweller* earnestly hopes that it may succeed. The preeminence which Swiss watchmakers have won in the horological world is largely due to the thorough training they have received in the watchmakers' schools which abound in that country.

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* The watch without index is evidently superior as regards regularity.

While manufacturers, according to the same authority, of clocks and watches find an extensive demand for their goods in foreign markets, there still continues a demand in America for similar articles of foreign make. For the year ending June 30, the value of foreign-made clocks brought in to this country was 388,214 dols., or 10,000 dols. more than the value of the importations of the previous year. The importation of watches and parts of watches amounted in value to 1,662,072 dols., or 158,832 dols. less than in the preceding year. If these figures could be compared with the value of the clock and watch productions of our own manufacturers, it would be seen that the importations play but an insignificant part in the sales of these goods in this country, while our export trade largely exceeds the importations. Since Yankee ingenuity devised machinery for making clocks and watches, our manufacturers have virtually controlled the markets of the world.

Cannot, says the *Jewelers' Circular*, some one among the many opticians of this country invent some practical means of holding eye-glasses on the nose that shall take the place of that instrument of torture which the French have so appropriately named "pinch-nose?" If a person has a short, thick nose, and is given to perspiring in hot weather, it is simply impossible to make the "pinch-nose" stay on, while in a large number of cases, they pinch the muscles leading to the eyes and become very painful. It is a common thing to see gentlemen with livid lines along each side of the nose where their eye-glasses have pinched them, making a very tender place, which is often very painful. Oculists inform us that these eye-glasses frequently injuriously affect the sight, and if their use is persisted in the injury may become permanent. We are aware that there are innumerable devices for mitigating this evil, but cannot someone overcome it entirely? The Spencer Optical Company has introduced an eye-glass with folding side bars which rest upon the temple, thus transferring the pinch from the nose to the temple, and while these are a step in the right direction, removing the danger of injury to the sight in consequence of pinching the nose, they do not seem to cover the ground entirely. An eye-glass without the half spectacle frame, that will pinch neither the nose nor the temple, would be a blessed boon to that very large class of the community that is dependent upon these artificial aids to sight. There are human infirmities that no art can cure entirely, and perhaps defective vision is one of them; nevertheless we make the suggestion in the full knowledge that an improved form of cye-glass would meet with popular favour.

The Clockmakers' Company.

The series of convivial gatherings in connection with Livery Companies may be said to have commenced for the ensuing season with the Court and Livery dinner of the Clockmakers', held on Monday at the Albion Hotel, in Aldersgate Street, under the presidency of the Master, Mr. J. Neale Dymond. At the conclusion of the repast a well-arranged toast-list was presented, and excellent selections of vocal music were performed under the superintendence of Mr. Seymour Smith. To Mr. Saul Isaac, ex-member of Parliament for Nottingham, was entrusted the duty of proposing "The Livery of the Watchmakers' Company." He assured them that the Court of Assistants endeavoured as far as was within their power to protect the rights and privileges of the Livery as they had existed many years ago. He was pleased to say that those rights and privileges had not been interfered with very much by the Local Government Bill of Her Majesty's present Ministry. The only thing the Companies had been deprived of was the right of electing a Sheriff for Middlesex. But to make up for that loss they had still the privilege of electing two Sheriffs for the county, or rather the city, of London; and it seemed to him that the only change they experienced as a result of the new Act was the limitation of their powers into a very small district, instead of extending them into the whole of the adjoining county. He thought they might congratulate themselves upon that satisfactory fact, because for a long time past they had been told that the great innovation and alteration to the Corporation and the City Guilds would leave them in a position of nonentity. Instead of that, however, their position had been strengthened in many respects, and he believed that it would be maintained not only during their own lives, but so long as the guilds could exist. Members of the Livery were somewhat happily situated, because they had a large number of Liverymen and members of the Court of Assistants who were connected with the trade of watch and clockmaking. They classed as a Liveryman that talented gentleman, and their esteemed friend, Mr. Hyde Clarke; and they also possessed, as a member, a gentleman holding a great and important position in the country, Mr. W. H. M. Christie, F.R.S., &c., the Astronomer-Royal. The Astronomer-Royal responded to the toast by thanking the company for the assistance they had rendered to the science which he represented by presenting prizes to students; and Mr. Hyde Clarke also acknowledged the compliment. In submitting "The Lord Mayor and the Corporation of the City of London," the Master said he could not tell what would be the outcome of the Local Government Bill as regarded the future government of the metropolis. There was no doubt that strong forces were afloat, and it was very difficult to tell how far their old institutions and beliefs and ideas would be able to hold their own against the great wave of democracy which was surely spreading itself over the whole of the continent of Europe and over their own country. While responding to the compliment, Mr. Alderman Savory said the Worshipful Master had alluded to the fact that they would soon see a great change in the local government of this great Kingdom. As regarded the city of London, although they would be surrounded by a vast number of new municipal bodies in the boroughs and rural districts of the country, he believed that the Corporation, being put on its mettle, would be able to hold its own as an example to all municipal governments around it. The compliment to the visitors was associated with the name of Mr. W. J. D. Spires, senior churchwarden of the parish of Clerkenwell, the "mother parish of clockmakers." In submitting the toast, Mr. Alderman Savory referred to the locality as the home of the watch trade, and, having drawn attention to the decrease of the business of the district, he trusted that it would recover its pristine prosperity and popularity. Mr. G. W. Adams, the "father" of the Company, introduced a compliment to the Master, whom he described as being highly appreciated and valued by all who knew him, and Major Finney responded to the customary compliment to the navy and the army. The toast of "The Wardens" was introduced by the Master, and was acknowledged in suitable language by Mr. D. Clarke, junior warden. The Rev. H. L. Nelthropp, M.A., F.S.A., gave "The Past Masters," to which Mr. G. W. Adams responded, an encomium upon the secretary (Mr. H. C. Overall) being delivered by Mr. E. J. Thompson. During the evening, the Master announced, in a few pathetic references, the demise of Mr. Warden W. Parker, whose death occurred during the previous week. He drew attention, also, to a coming event in the election of Mr. Alderman Savory as Master of the Company.

Solders and Soldering.

(Continued from page 69.)

During this second stage of the process it is necessary to be very cautious in the application of the flux; the pieces of solder should only be dipped in before being placed in position, for the flux is mainly for use in preparing the surfaces; as soon as this solder has run well the temperature should be lowered, in order not to dry up and burn the solder, which would be apt to become brittle.

In preparing the solders, the aluminum is first fused and stirred with a small iron rod; then add the zinc and stir again; add a little tallow and cast the solder into rods.

The zinc must not be heated too much as it will volatilise, leaving the alloy rich in aluminum and therefore brittle.

Fluxes for Soldering.—Various substances can be employed as fluxes for cleansing the surfaces to be united.

Sal-ammoniac reduced to powder and made into a paste with sweet oil or merely reduced in water.—A paste formed of *sal-ammoniac* and *resin* reduced to powder with water or oil.—*Resin* alone will suffice for the soft soldering of copper or brass.—*Venice turpentine*, which has the advantage of not causing steel to rust, although it makes the objects sticky, so that they require to be afterward rinsed in alcohol or turpentine.

Various acid solutions are sold for the purpose, and experience will enable the watchmaker to select that which is best adapted to his requirements.

Lastly, saturated *chloride of zinc* can be recommended. It is prepared as follows:

Some diluted *hydrochloric acid* (which also goes by the name of spirits of salts or muriatic acid) is placed in a glass flask, and strips of zinc are added one by one; the flask must be left uncorked and the zinc added a little at a time, lest the effervescence that occurs should break the vessel. When the zinc added is not acted on by the fluid, it may be concluded that the acid is saturated or "killed," and the fluid may then be transferred to a stoppered or corked bottle for use. In using it a small quantity is spread over the surfaces that are to be united, and the solder will be found to run with great freedom (some authorities recommend the addition of sal ammoniac to the extent of one-fourth the height of acid taken). It is well again to warn the reader that the pieces must be thoroughly washed after employing these liquids, for otherwise they will cause tools with which they are brought into contact to rust, and will rust themselves if they consist wholly or in part of iron or steel. The vessel containing the fluid must be kept well away from the work bench.

The liquid can be used immediately after being prepared as above explained; but all acid reaction may be prevented by evaporating at a moderate temperature until of the consistency of oil; it is then allowed to cool and kept in a bottle.

The *soldering iron* with a head of copper, such as is used by tin plate workers, is well known; if made on a small scale it may occasionally be of service to the watchmaker. The tool may be T-shaped, one end of the horizontal portion, the copper head, terminating in a rather thin blade and the other enlarged, so that when held in the flame of a lamp it will store up a sufficient amount of heat. The upright part of the T corresponds, of course, to the handle. After the iron has been heated just short of redness in the dark, the end of the blade is moistened with soldering fluid and a small piece of solder attached to it. The object to be united is gently heated and also moistened with the fluid; the iron charged with solder is presented to it, often with the enlarged extremity of the head maintained in the flame of a lamp, and the solder will, as a rule, run without again heating the object, although this might be done while the iron is still in contact. It may be found convenient to fix the iron in a suitable position, with the lamp below the large end of the head; the object will then be brought against the iron after being moistened with the fluid.

It is often advisable to *tin* surfaces to be united previous to soldering them; in order to do this they are moistened with soldering fluid, small pieces of solder are then spread over, and these are fused by passing the hot iron over the surface; or the solder can be spread after fusion by means of a metallic rod charged with the liquid.

Brazing.—This operation consists in soldering iron, steel, brass or copper, with an easily fusible brass, which is specially prepared in the form of coarse dust, termed spelter solder, or cut in thin strips of convenient shape. The method resembles, in all essential particulars, the application of hard solders previously referred to.

Heat is usually applied direct by the blowpipe, borax being used as a flux; it is necessary to avoid a greater degree of heat than would melt the brass, since the object might in that case be fused. For fine work it is better to employ silver solder.

On an emergency, two pieces of steel can be united by brazing and subsequently hardened, and we have successfully practised this method in such a case as the following: A small portion having been broken off from the quarter-piece of a repeater, we dovetailed into it another piece of steel of the required form, but a trifle too large at the upper side. When the brass had run well into the joint and the piece was still at a full cherry-red heat it was hardened, and afterward cleaned and tempered to a blue colour. The upper surface was then brought into shape with a good file, resting it on a wooden block against a projection, and, after making sure that it would act correctly, the whole was smoothed and polished. It has since worked and does not show signs of wear.

[We find that the foregoing article, which we have credited to the New York *Jewellers' Circular*, is, with the exception of a few lines added in the list of Solders, a simple transcript from Saunier's Watchmakers' Handbook.—Editor *W. J. & S.*]

Birmingham Testimonials to Mr. Gladstone.—A movement is on foot among the working men of Birmingham for celebrating Mr. Gladstone's approaching visit to that town. Following the example of the Potteries, the testimonials are to take the shape of trade trophies as showing what Birmingham can turn out in the way of art workmanship. One of the most notable presents will combine the workmanship of the principal trades of the town. It will take the shape of a large shield of enamel and gold, enclosed in a wreath of bay leaves represented in ivory. The rose, shamrock, and thistle appear in the design of the ivory carvers, and room will also be found in the exterior ornamentation of the shield for a device of the fire enamellers, representing the Birmingham Town Hall, and for a miniature of a woodman's axe. Letters inside this framework will at once serve as an example of saw piercing, and as an explanation of the part that the button trades have had in the gift. Gold tracery on a silver ground will be next seen if the shield be considered, as it is now described, from the outer frame to the centre. This is to be studded with buttons representing the modern achievements of Birmingham in artistic button designs. Engraven on the shield are to be the arms of Birmingham. The town's motto, "Forward," will be in pierced letters. Gleaming in the corners will be noticed the buttons of the Birmingham Police, Fire Brigade, Health Department, and Waterworks, which are all under Corporation control. This splendid work of art will be set by-and-bye in a plush frame, and the whole artistically mounted on a brass easel, for presentation to Mr. Gladstone as an example of the work done by the metal workers, the ivory turners and carvers, the button makers, the engravers, the brass workers, the gilders, the silversmiths, and the saw piercers of Birmingham. The metal trades are busy with other magnificent gifts. A Hawarden dinner bell will be conspicuous among them. A large beautifully toned bell of genuine bell-metal, decorated with embossed designs, will be hung upon a splendid brass bracket, and presented ready for attachment to some interior wall of Hawarden Castle. Another trophy will be a polished brass inkstand of first-class workmanship, artistically chased, and ornamented with figures and two shields, one showing Mr. Gladstone's own armorial bearings and motto, the other those of Birmingham. With this inkstand are to go some specially made pens, the holders of mother-of-pearl in fine feather carved shapes, the pens themselves of gold with diamond points. The pen makers, by the way, will signalise the visit by the manufacture of a new pen bearing a medallion likeness of Mr. Gladstone. The glass trades are contributing a beautiful vase, to be made by the same artisans as are accustomed to do glass work for the Queen. The jewellers are likewise busy devising choice specimens of their art. Other gifts, the precise design of which is at present unknown to the working-men's committee, are in preparation.

Precious Stone Lore.

IF one were to judge by the universal love of jewellery, and by the enormous variety of articles over-stocking the market, says the *Standard*, one would readily admit that stone-worship and jewel-lore have anything but died out, in modern times. It is true that the awe in which precious stones were once held, and the superstitions attached to them, are fast disappearing, but not so their irresistible fascination. The Roman Senator, Nonius, went into exile rather than concede his magnificent opal ring to the Cæsar who coveted it; and Shylock wept bitterly over the loss of his turquoise. In a similar way and in more recent days, men have loved precious stones better than breath or liberty, while women have sacrificed that which ought to be dearer to them than life for gems, which, after all, are but shining bits of crystallised rock and quartz. It is not the intrinsic value alone, nor the matchless beauty of the gems which constitutes their great attraction. The primitive cause is rooted deeper in human nature than one would at first suppose. Mineralogy, like almost every other science, found its origin in the superstitious research for magical and medicinal means of doing wonders. The glorification of precious stones, of which old literature is so full, is closely allied to all religious beliefs. Gems were ever held to represent Divine attributes; they were accordingly looked upon as playing an important part in human destinies, and as being meet offerings to the gods. The practice of adorning shrines with gems, so prevalent in ancient mythology, was continued by the Roman Church during the Middle Ages. The Egyptian abraxas, adapted afterwards by the Gnostics, are well-known talismans, and of the Etruscan and Egyptian Scaraboei worshipped as gods, the British Museum contains a splendid collection. The crescent-shaped Shaddai of the Jews, and the Mohammedan amulets, sown into tarbushes are still worn in Syria; indeed, no Eastern parent would think his child safe without them. Besides being emblematical of Divine attributes and virtues, gems were supposed to possess all kind of healing and protecting powers, especially for guarding against poison, and averting the Evil Eye. The thousand ways in which they were used for medicinal purposes would puzzle a modern Marbodeus to collect and describe. Queen Elizabeth boasted of being able to heal all diseases by the virtue of a stone then in possession of the Crown of England. Civilisation has since dispelled all such absurd notions, but the belief still exists in many parts. The Chinese mandarin still takes small dissolved pearls as a cure for many diseases, and powdered coral is deemed a sovereign remedy for the ills of teething children.

One of the oldest and most curious properties of noble gems was that of being reputed sexual, and producing offspring. The predilection for the number twelve is also worthy of notice. There were twelve stones in the breastplate of the Jewish High-Priest. The New Jerusalem, as described in the Apocalypse, has also twelve stones for its foundations, and twelve portals, each of which is hewn out of one large pearl. The twelve sacred stones were, moreover, appropriated to the signs of the Zodiac and to the twelve apostles. In more recent times a special influence has been attributed to each stone over each month of the year, and the practice of adopting the gem of the wearer's birth month is still in vogue in Germany. Those who are born in May will wear emerald to be successful in love; those of July, ruby, so that no grief may affect them; August, sardonyx, to secure conjugal felicity, &c. Each gem is supposed to possess certain qualities which are its special dowry. The origin of this practice can generally be traced in the etymology of the word, or in the myth or legend attached to each gem in the country where it was first found. Many of them are doubtless of Persian or Semetic origin, but the Greek mythology contains them nearly all.

Thus, adamus or diamond was a Cretan youth transformed by Zeus into a brilliant and placed among the stars. Amethyst was another godly favourite, whom Diana turned into a purple-tinted stone, to which Bacchus added the colour of wine. To some such origin, and chiefly from the colour of the gems, their various qualities owe their prestige in ancient and modern lore. The kingly diamond, which has become the appanage of aristocracy, is the symbol of justice, innocence, constancy, and impassivity of fate. Camillo Leonardus assures us that it baffles the deadliest poison and the most subtle witchcraft. It moreover protects ladies against those horrible nocturnal visitors, incubes. The Koh-i-Noor was for centuries the talisman of India; and when years ago, the Governor of Borneo offered 500,000 dollars, two equipped war brigs, and numbers of cannon for the famous stone of Matan, the Rajah refused, on the plea that the fortunes of his family were connected with it, and that the water in which it was dipped cured all diseases. Not less powerful was the sapphire, so useful once to the necromancer, or the holy stone, as it was called, being the emblem of chastity and securing the granting of all prayers. The Pagans dedicated it to Apollo. It became the Episcopal stone by decree of Innocent III., in the twelfth century, but in modern days it has met with a sad reversion of fate, and is no longer accounted a lucky stone. The ruby, the live-coal of the Greek, is not less emblematical and potent, and the Brahman traditions speak wonders of the abodes of gods, lighted by enormous rubies and emeralds. It was believed to dispel evil thoughts, and warned its wearer of danger by becoming black or obscure. The East Indian merchants still prize it so highly that they will not willingly show a fine specimen without a bribe; and the Chinese present it, to the present day, as a most sacred token of friendship. The now humble garnet and the oblong carbuncle share the favours of their parent the ruby, the latter of the two being famous for its light-giving properties in the dark. Topaz—the gold-stone of the ancients—was much valued by them for medicinal purposes, for dispelling enchantment, and for calming frenzy. If superstition had still so firm a hold as once it had upon the minds of educated people, what a favourite the amethyst would be, since such a stone, especially when set in a cup, rendered the possessor of it incapable of intoxication. According to modern etiquette, the amethyst is the only stone which may be worn during mourning. The peerless, starry opal, that child of love, as it has been called, far from being an unlucky stone, as it is now supposed to be, was once believed by Albertus Magnus, Marbodeus, and others, to rejoice the heart of its owner by rendering him loveable, and bestowing upon him the gift of invisibility, which made it the patron stone of robbers. To be on the right side of this gem's influence, some say that one ought never to accept it as a present. It has, however, been asserted that the opal was not considered unlucky in England until Sir Walter Scott published his "Anne of Geierstein." The veneration of the Peruvians for the green emerald, dedicated to Mercury by the ancients, is well known, and the worshippers of Mantu still believe that the mines whence are extracted all the daughters of the mother-gem, are guarded by terrible genii, dragons and other one-eyed people. The beryl was once supposed to increase conjugal love and to cure distemper and leprosy; an agate, to quench thirst and to turn away storm and lightning, even as coral, of which the Neapolitans still wear amulets to avert the Evil Eye. Turquoise, according to Boethius, especially protects against falls, and heals differences between man and wife. Amber wards off erysipelas and all soreness of the throat. Sard, cornelian, and the stone bezoar, mentioned by Lord Lytton, especially staunch all flux of blood and cure serpents' bites, while heliotrope confers the gift of prophecy and long life. Many more precious stones might be quoted, and these cursory remarks should not be closed without a word about the lily among gems, the moonlight queen where the opal is the star, viz., the pure and delicate pearl. Whether simple minded fishermen still believe or not that they are the tears of angels or of naiads, or celestial drops of dew hardened within the shell of the oyster, the priceless gem will ever be considered as the emblem of purity and the representative of all feminine virtues. If but a part of the potent qualities ascribed to this gem and to precious stones in general by world-old traditions, which are even now loth to die out, could be conferred in reality, what influence gems would have in human lives! But jewel lore is only a relic of the past, and a further proof of man's innate passion for scrutinising the physical and moral nature of everything.

Rings.

FEW who bedeck themselves with gold and silver ornaments pause to reflect upon the original signification of such things, or imagine, that they are the relics of the barbarism of our early history. Yet, according to one of our contemporaries, undoubtedly such is the case. The glittering necklet which the nineteenth century lady clasps around her neck is only a survival of the old practice of placing a metal collar upon a slave as a mark of ownership, and the bracelet of the maiden and the manacle of the felon have a common origin. In the same way rings were once worn as a badge of serfdom, but possibly because of the ease with which they could be detached from the finger and destroyed their use for this purpose was soon abandoned. Among the early Jews they were used as a symbol of authority. Pharaoh placed his ring upon the finger of Joseph when he made him ruler over Egypt, as a sign that he had invested him with supreme power; and King Ahasuerus sealed his grant to Mordecai and the Jews with his signet ring, saying, "That which is sealed with the king's seal no man may reverse." In mediæval times the signet ring of a sovereign or powerful noble was considered a sufficient warrant of authority, and to the wearer it was an open sesame in all places where its owner had influence. Some of this signification has been handed down to our own day, and bishops still wear a ring upon the third finger of the right hand as a mark of their episcopal authority. With the Greeks they were used as a mark of liberty, and every freeman wore a plain band of metal around his finger to distinguish him from a serf. These rings were at first made of iron, as were those worn by the Lacedæmonians, but as that luxury and love of show which has ruined other nations besides the Greeks began to increase, that metal was exchanged for gold. Afterwards they were richly ornamented with precious stones, ultimately becoming the most gorgeous of all their personal adornments. At first the Romans used the same simple band of common metal, and gold rings were allowed as a mark of rank to senators, equites and ambassadors only, but the love of the magnificent affected them in time, and they commenced to display their wealth upon their fingers, going so far as to have rings for various entertainments, different seasons of the year and even different hours of the day. With the fall of the Roman Empire ceased to a great extent the habit of lavish personal decoration with articles of jewellery, but the custom had spread, and rings have been found among the remains of the early Saxons, though of a much less elaborate design than those worn by the Greeks or Romans. Rings were used for purposes other than adornment. In the East, and at one time in Western Europe, they were used as a medium of exchange, and were recognised as a genuine currency, passing from hand to hand with the same facility as our modern coinage. Up till quite recently there were manufactured for the purposes of the African trade rings composed of a mixture of copper and iron, known as Manillas, and used for barter in the ordinary way. Medicated rings, having the supposed power of alleviating or curing disease, can be traced back as far as the time of Marcus Aurelius. Trolian, a physician of the fourth century, possessed a signet ring on which was engraved a representation of Hercules strangling the Nemæan lion, and which was a certain cure for colic. In our own country, Edward the Confessor was presented with a ring which was an unfailing remedy for epilepsy, and which was preserved for some centuries in Westminster Abbey. In the cathedral at Perugia is still shown a ring which is said to be the wedding-ring of the Virgin Mary, and which has performed so many miracles that a book was written on them in the seventeenth century. Other marvellous powers besides the curing of diseases have been attributed to rings. Otnet, King of Lombardy, was the happy possessor of one which would always—no matter where he wandered—direct him into the right path, a ring which would be useful in London during November fogs; and many juveniles, and perhaps adults, have sighed for the ring of Aladdin which controlled the obedient and obliging genii. How happy would the wearer of that ring be; how good and how generous! But in this pleasant castle-building it is easy to overlook the possibility that if such a ring existed it might find its way to the finger of some unscrupulous individual who would use its power for some nefarious purpose. There was a ring belonging to Gyges, King of Lydia, which has ever been a favourite with the imaginative. It enabled the wearer to become invisible at will, and to change the solid components of the body for a more elastic and ethereal material, to which bolts and bars or brick walls offered no obstruction. How convenient such a ring would be nowadays. The much-dunned householder could boldly take his morning constitutional without fear of the tax-collector or infuriated butcher, and could encounter his most pressing creditor without a tremor. The vagaries of fashion could be treated with contempt, and an impecunious acquaintance or conceited bore could be avoided with ease. What an acquisition such a thing would be to a gentleman following the profession of a burglar! He would have no further need of jemmy or skeleton key, and the prying proclivities of his friend, the policeman, would no longer incommode him in his business. This ring would be useful also to that modern innovation, the interviewer, who would have less need to draw on his imagination for the private details of which he is so fond. It is easy to imagine a dozen uses to which a politician could put it, and, in fact, there are few persons who would not find it convenient at times to be able to make themselves absent in the flesh but present in the spirit. In the present day, rings are almost exclusively worn as ornaments, with no signification beyond that attached to each—with the exception, perhaps, of wedding rings. These were first introduced by the Jews, and have a history of their own. While sharing with other rings the common origin, they have changed much less in form and meaning. First used as a symbol of possession when the wife was the slave of the husband, it soon attained a higher signification, which it has attained until now. The shape is said to symbolise eternity and truthfulness, and it was placed upon the left hand as a mark of the submissiveness of the wife to the husband, and on the third finger because of a supposed direct connection between the vein which runs through that finger and the heart, a physiological error which can readily be forgiven for the sake of the sentiment which it suggests. Pliny speaks of wedding rings as being made of iron, but Tertullian, writing less than 200 years later, describes them as being of gold—the change in metal probably corresponding with the change in the position of the wife, marking her progress from a serf to the equal of the husband. Many of the superstitions attached to weddings and wedding rings have died out, but even now it is not an uncommon thing for jewellers to mark as "lucky" the wedding rings which they have for sale. Parliament which is not often given to sentiment has thought fit to legislate on behalf of the purchasers of wedding rings, and 30 years ago passed an Act requiring all such rings to be made of standard gold. A curious wedding ceremony formerly took place every Ascension Day at Venice, called the "wedding of the Adriatic." The Doge of Venice, in his State barge, and in company with his nobles, arrayed in all the magnificence for which Venice was famous, proceeded to sea, where an elaborate and impressive ceremony was gone through, at the end of which the Doge, standing on the gilded prow of the Bucentaur, threw a ring into the water, as a sign that the Adriatic was wedded to Venice as indissolubly as a wife to her husband. First performed in the year 1179, this ceremony was repeated yearly without a single omission until 1797, when Napoleon Bonaparte took possession of Venice, and her existence as an independent Power and the "Wedding of the Adriatic" ceased together. It is difficult to imagine what novelists of a certain class would do without the assistance of wedding rings. After all the trials and tribulations which persons who are unfortunate enough to be dealt with in novels have to pass through, the placing of a ring by the handsome hero on the finger of the lovely heroine is considered a sufficient recompense for past ills and an amulet against all future ones. One cannot help wishing that this was always so in real life; but, unfortunately, there the wedding ring is more often a harbinger of woe than an infallible panacea.

Applications for Letters Patent.

The following List of Patents has been compiled especially for *The Watchmaker, Jeweller and Silversmith*, by Messrs. W. P. Thompson & Boult, Patent Agents, of 323, High Holborn, London, W.C.; Newcastle Chambers, Angel Row, Nottingham; and 6, Lord Street, Liverpool.

13,663. M. Prandstätter, London, for "Improvements in and relating to detector or record clocks for hackney carriages and the like." Dated September 21, 1888.

13,686. A. Kaiser, London, for "Improvements in escapements for watches and clocks." Dated September 22, 1888.

13,701. J. Shaw, W. Shaw, and T. Harrison, Bradford, for "Improvements in bells or gongs for churches, clocks and chimes." Dated September 22, 1888.

13,713. D. Buckney, London, for "Non-magnetisable balance for watches and chronometers." Dated September 22, 1888.

13,794. R. Whittaker, London, for "Improvements in escapements for lever watches and other timekeepers." Dated September 24, 1888.

13,907. T. A. Bayliss, Birmingham, for "An improved sliding fastener for watch chains, necklets, bracelets, and similar articles." Dated September 27, 1888.

13,929. G. Herschell, London, for "Improvements in watches." Dated September 27, 1888.

14,117. A. Chart and E. Colyer, London, for "A pocket purse glove to be worn upon the hands by ladies and gentlemen for the carrying money and other valuables safely." Dated October 1, 1888.

14,209. C. Mackenzie, Liverpool, for "Improvements in mechanism for preventing damage to the movements of watches, clocks, musical boxes, or other clockwork mechanism, on the breaking of the mainspring." Dated October 3, 1888.

14,231. P. Lazard and L. E. Daniel, London, for "A new metallic alloy suitable for the manufacture of jewellery, trinkets, and other objects." Dated October 3, 1888.

14,271. W. Aspin, London, for "Improvements in watches." Dated October 4, 1888.

14,273. G. Herschell, London, for "Improvements in and connected with pocket timepieces." Dated October 4, 1888.

14,451. T. Morton, Birmingham, for "Improvements in solitaires, studs or sleeve links." Dated October 9, 1888.

14,455. F. L. Turner, Birmingham, for "An improvement in a swivel knob which can be used for watch pendants, lockets or similar articles, or handles for cabinet work." Dated October 9, 1888.

14,762. P. Perret, London, for "Improvements in the manufacture of balance wheels and balance springs for watches and chronometers." (Complete specification.) Dated October 13, 1888.

14,763. P. Perret, London, for "Improvements in keyless watches." (Complete specification.) Dated October 13, 1888.

14,764. P. Perret, London, for "Improvements in and connected with spring barrels for watches and the like." (Complete specification.) Dated October 13, 1888.

14,765. P. Perret, London, for "Improvements in watches." (Complete specification.) Dated October 13, 1888.

14,766, P. Perret, London, for "Improvements in regulators for watches." (Complete specification.) Dated October 13, 1888.

14,922. H. J. Salmon, London, for "The protection of purses carried in the hand, called the 'Ladies' patent safety purse.'" Dated October 17, 1888.

Recent American Patents.

Alloy of Copper, Nickel and Lead. Geo. F. Pottle	390,251
Apparatus for Synchronising Clocks. Chas. E. Hoefling ...	390,230
Buttoner. C. L. Uhry	389,863
Cannon Pinion for Watches. H. E. Murdock	389,663
Clock. E. M. Moulton	389,852
Clock Key. A. M. Lane	389,931
Ear Wire. B. A. Ballon	389,830
Electric Time Recorder. A. Wirsching	389,626
Inlaid Jewellery. M. Cziner and R. Brettner	389,446
Interchangeable Initial Ring. O. Thie and C. M. Levy ...	389,778
Jewel Setting. Nathaniel L. Ripley	390,620
Mechanical Musical Instrument. John McTammany	390,385
Mechanical Musical Instrument. John McTammany	390,386
Method of Etching and Producing Inextinguishable Metallic Deposits upon Bright Metal Surfaces. Ernest Nienstaedt	390,391
Method of Ornamenting Watch Cases. J. Baynes	389,917
Napkin Holder. J. W. Reed...	389,940
Opera Glass Holder. A. W. Buchbinder	389,194
Repeating Watch. Charles H. Meylan	390,501
Safety Device for Music Boxes. G. J. Jaccard	390,024
Time Register for Railroad Stations. Buckner F. Freeland ...	390,222
Watchmaker's Tool. James Cook	390,457
Watch Movement Box. W. A. Gill and C. A. Morningstar	390,161
Watchmaker's Tweezers. Phillip Seewald	390,260
Winding Indicator for Timepieces. Abraham M. Bachrach ...	390,333

A printed copy of the specifications and drawing of any patent in the American list, also of any American patent issued since 1866, will be furnished from this office for 2s. 6d. In ordering, please state the number and date of the patent required, and remit to J. Truslove, Office of *The Watchmaker, Jeweller and Silversmith*, 7, St. Paul's Churchyard, E.C.

Gazette.

Partnership Dissolved.

Fretson and Simmons, Mexborough, Yorkshire, pawnbrokers.

THE BANKRUPTCY ACT, 1883.

Receiving Orders.

To surrender in the Country.—St. Clair, George Edward Morland, Sheffield, cutlery manufacturer. Henry Parker and Louis Castiglione, (trading as Henry Parker & Co.) Aston, electro-platers. William Duffus, Birmingham, jeweller. Francis Rivalta, Wellington, jeweller.

In London.—Matthew William White (trading as Johnson and White), Red Lion Street, Clerkenwell, silversmith.

Public Examinations.

In London.—W. Geddes, Great Marlborough Street, diamond merchant; Nov 16, at 12.30. G. W. Smith, Old Bond Street, and elsewhere, jeweller, Nov 6, at 12.

In the Country.—H. Parker and L. Castiglione (trading as Henry Parker and Co.), Aston, electro-platers; November 20, at 2. H. Parker (separate estate; November 20, at 2. L. Castiglione (separate estate), Handsworth, November 20, at 2.

Adjudications.

In London.—A. Bird (trading as Arthur Bird & Co.), Leadenhall Street, City, metal broker.

In the Country.—H. J. Brown and E. F. Brown (trading as William Brown), Sheffield, jeweller. F. Rivalta, Wellington, jeweller. E. Amans, Eton, Bucks., watchmaker.

Notices of Dividends.

In London.—W. Fitch, Mare Street, Hackney, watchmaker and jeweller, 3s. 6d., first, on and after Oct. 26, Weavers' Hall, 22 Basinghall Street, City. G. A. Phillips, Cardiff, watchmaker, 2s. 0¼d., first and final, Official Receiver, Cardiff. A. Faulkner, Mare Street, Hackney, jeweller. 2s. 1½d., first and final; any day except Saturday, Chief Official Receiver, 33, Carey Street.

Scotch Sequestration.

J. Rankin, Glasgow, jeweller.

BANKRUPTCY.

Re William Terry.—The first meeting of creditors in the matter of William Terry, watch material dealer, Spon Street Coventry, was held at the office of the Official Receiver on the 11th ulto.—The debtor estimated his liabilities at £209 0s. 5d., and his assets at £114 1s. After deducting the preferential claims, £12 17s. 9d., there remained £101 3s. 3d. for the unsecured creditors, showing a deficiency of £94 19s. 5d.—The Official Receiver stated that the furniture and stock, which had been estimated to be worth £100, had only realised £53 10s. 9d., and the book debts were not coming in so satisfactorily as was expected. The liabilities, on the other hand, would be rather more than was estimated, one creditor, Mrs. Leighton, having proved for £127 9s. 11d., while the debtor had only put her down for £118. The proofs admitted amounted to £147 9s. 10d. The debtor had made no offer, and the estate was being wound up in the ordinary way.—Mr. Goate, the debtor's solicitor, said he had no statement to make on behalf of his client, and the meeting closed.

Re William Brown, Sheffield.—At the London Bankruptcy Court, on October 17th, before Mr. W. J. Clegg, the Official Receiver for Sheffield, the first Meeting of Creditors was held under the failure of Henry John Brown and Edward Francis Brown, jeweller, of 62, High Street, Sheffield, trading in partnership together under the style of "William Brown." The receiving order was made on the 13th of September last, and the accounts filed showed the following figures:—Creditors unsecured, £5,900 11s. 5d.; creditors fully secured, £154 10s. (the estimated value of securities being £201); creditors partly secured £264 6s. (value of securities, £242 8s.); and preferential creditors, £44 5s. 8d. The estimated assets are as follows:—Cash, £47; stock, £3,700 11s. 2d.; machinery, £150; furniture, £5; cash in the hands of Messrs. Griffiths and others, £56 4s.; book-debts, good, £265 10s.; book-debts, bad and doubtful, £299 14s. 1d., estimated to produce £10; estimated surplus of securities in hands of secured creditors, £46 10s.; making total assets, after deducting preferential debts, £4,236 10s. 2d.; leaving a deficiency of £1,685 19s. 3d. After the proofs had been taken,

The Chairman said that it appeared that the bankrupts began business in 1881, and from the statement made on the 30th November of that year it appeared that they then had a capital of £2,526 13s. 1d. They had kept a day book, a ledger, and cash book, but the latter had not been balanced to date. The bankrupts stated that they took stock and made balance-sheets from 1881 to 1884 and he (the Chairman) had those of 1881 and 1883. From the former of those statements it appeared that the capital was £2,526 13s. 1d., the profit made during that year being £613 10s. The balance-sheet of 1883, however, showed that the capital had been diminished by £1,301, it being then stated to amount only to £1,225, while the amount of profit made during the year was only £123. He believed that a statement was made, or was commenced, at the end of 1884, but he had not got a copy of that account, and after that date no statement appeared to have been taken. Although the receiving order was made six weeks ago the statement of affairs was uot delivered by the bankrupts till Monday last, not in sufficient time to enable him to prepare a summary of the statement. as was usually done, and therefore the summary was not given till to-day. The junior partner had stated that after 1884 the senior partner had objected to stock being taken, and therefore no balance-sheet was taken till July last, when a statement was submitted to a private meeting of creditors, and that statement would be in the mind of the creditors. It would be seen that the figures did not altogether agree with the statement now produced, but that might be explained by the fact that the former statement was made with the object of offering a composition to the creditors, and it was to the bankrupts' interest to make the assets appear as small as possible. No deficiency account had been prepared by the bankrupts, but from what he (the chairman) could see from the statement, it would appear that it arose from the excessive drawings of the partners, for notwithstanding the small amount of profit that had been made, it appeared that from January. 1881, to June, 1888, Mr. Henry Brown had drawn £3,082, and Mr. Edward Brown £2,350, making an average for the former of £410, and for the latter £314 a year. Looking at the fact that the deficiency now was £1,685, it would seem that had the partners not drawn so heavily, that deficiency would not have arisen. As to the causes of their failure, the bankrupts did not seem to agree; Edward stating that it was caused through the falling off of trade, to his partner taking more money out of the concern than the business would stand, aud to his taking stock to pay his private accounts; whereas Henry accounted for it by general depression in trade, owing to jewellery being out of fashion, and he denied that he took more money out of the business than his partner, or that he took any stock to pay his debts. With regard to the trading he could not help believing that ever since 1884 the bankrupts had been trading in a state of insolvency. In that year they might have been able to pay their creditors in full, but after that they could scarcely have done so. He did not say that the bankrupts knew it then, but he thought they would have done had they looked into their affairs. The fact of their being in a state of insolvency was evidenced by the fact that they had had accommodation bill transactions for some time past, and they had been in the habit of raising money by pledging goods with pawnbrokers. Both of those circumstances seemed to him to point very strongly to the fact that they were insolvent. He believed he had placed before the creditors all the facts that he had been able to elicit during the short time he had had at his disposal since the filing of the statement, and it now remained for the creditors to appoint a trustee to investigate and wind up the estate. He had, in the interest of the estate, appointed an interim receiver to carry on the business to enable it to be sold as a going concern if possible, and he should require the approval of the meeting of that appointment.

Mr. Jacobs, of Birmingham, said that the matter would require very careful investigation. In the early part of this year the creditors believed that there was £6,000 or £7,000 worth of stock in the premises, and they were anxious to know where it had gone. He should propose that Mr. Poppleton, chartered accountant, of Birmingham, be appointed trustee to act with a committee of inspection.

After a short discussion, Mr. Poppleton was then appointed trustee, with the following gentlemen as a committee of inspection :—Mr. Brierly and Mr. Holmes, of Sheffield; Mr. Griffiths and Mr. Jacobs, of Birmingham; and Mr. Troup, of London.

The meeting was well attended, several legal gentlemen appearing in various interests.

Re Thos. Johnson, late watchmaker and jeweller, Ossett. — The debtor stated that he had carried on business since September, 1883, having commenced without capital. His father lent him stock, and put him in the shop. He paid £100 for the stock within about a-year-and-nine-months afterwards. The first year he made a profit, but since then he had gone gradually to the bad. He attributed his failure chiefly to bad health and inability to attend to business, but he had had one or two losses beside. His bad debts amounted to about £60. One young man got goods of him to the value of £30 and borrowed about £10 beside, and eloped with them. He also lost upon two pianos which he bought by auction, and which turned out inferior to what he expected. He became aware of his insolvency about a month previous to his failure. He borrowed £49 of his father in November, 1885, and it was still owing. —Examination concluded.

The Deeds of Arrangement Act, 1887.

Humphreys, Joseph, watchmaker and jeweller, Old Hall Road, Sale, Chester, and 126, Great Jackson Street, Hulme, Manchester. Deed of Composition, dated October 19, filed October 23, for the payment of 5s. in the pound, within 21 days from execution of deed. Liabilities, £183 0s. 11d. Trustee, Mr. J. E. Davies, 32a, Brown Street, Manchester.

Richardson, Alfred Wharry, watchmaker and jeweller, High Street, Syston, Leicester. Assignment of estate, for the benefit of creditors, dated October 16, filed October 20. Unsecured liabilities, £170 5s. 4d.; secured, £15; net assets, £120. Trustee, Mr. Frank Fletcher, Commerce Chambers, 3, Park Lane, Leeds.

IN BANKRUPTCY.

TO JEWELLERS, WATCHMAKERS and others.—To be disposed of by private treaty as a going concern, the valuable Stock-in-Trade, Fixtures and Fittings in the shop now occupied by William Brown, Jeweller and Watchmaker, 62, High Street, Sheffield. The Stock (valued at £4,111) is in excellent condition, and the shop occupies the best position in Sheffield for its kind. There is an old-established connection to it, and it presents an opportunity which seldom comes into the market. For further particulars and to view, apply to the undermentioned, from whom forms of Tender can be had, which must be submitted on or before the 16th November, 1888. The Stock can be tendered for either with or without the tenancy (which will be subject to arrangement with the landlord). The highest or any Tender not necessarily accepted.

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Buyers' Guide.

BAROMETER MAKERS.

Barker, Francis & Son, 12, Clerkenwell Road, London, E.C. (*See Advt.*)

CLOCK MANUFACTURERS.

Evans, W. F. & Sons, Soho Clock Works, Handsworth, Birmingham. (*See Advt.*)

Seth Thomas Clock Co., 7, Cripplegate Buildings, Wood Street, London, E.C.

DIAMOND POLISHERS.

Ford & Wright, 116, Clerkenwell Road, London, E.C. (*See Advt.*)

ELECTRO-PLATE MANUFACTURERS.

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Hands & Son, Suffolk Street, Birmingham. Peruvian Silver Spoons.

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King, J. W., 13, St. John's Square, Clerkenwell, E.C. (*See Advt.*)

GOLD & SILVER REFINERS.

Day, Edward, 28, Warstone Lane, Birmingham. (*See Advt.*)

The Sheffield Smelting Company, Sheffield, *Sell* Gold and Silver (pure and unalloyed). *Buy* all materials containing Gold and Silver.

Westwood, Charles & Sons, 14, Hall Street, Birmingham. (*See Advt.*)

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Reading, N. C. & Co., 186, Warstone Lane, Birmingham. (*See Advt.*)

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Preston, E. & Co., 44, Spencer Street, Birmingham.

JEWELLERS, MANUFACTURING.

Booth Brothers, 43, Northampton Street, Birmingham. (*See Advt.*)

Greenberg, I. S. & Co., 44, Frederick Street, Birmingham. (*See Advt.*)

Joseph, B. H. & Co., 20, Frederick Street, Birmingham. (*See Advt.*)

Walton, G. E. & Co., 52, Hylton Street, Birmingham. (*See Advt.*)

MASONIC JEWEL MAKERS.

Vaughton & Sons, Gothic Works, Birmingham. (*See Advt.*)

MUSICAL BOX MANUFACTURERS.

Greenwood, J. & Sons, 34, Farringdon Road, London, E.C. (Importers.)

Nicole Freres, 21, Ely Place, London, E.C. (*See Advt.*)

OPTICIANS (Wholesale).

Botwright & Grey, 13, Spencer Street, Clerkenwell, E.C. (*See Advt.*)

Newbold, A. W., Jun., 58, Compton Street, Clerkenwell, E.C. (*See Advt.*)

Perken, Son & Rayment, 99, Hatton Garden, E.C. (*See Advt.*)

Raphael, J. & Co., 13, Oxford Street, London, W. (*See Advt.*)

Taylor, Jno., 49, Tenby Street North, Birmingham. (*See Advt.*)

RING MANUFACTURERS.

Appleby, Alf., 124, Vyse Street, Birmingham. (*See Advt.*)

Hope, S., 126, Vyse Street, Birmingham. (*See Advt.*)

SAFE MANUFACTURERS.

Chubb & Sons (Limited), Queen Victoria Street, London, E.C. (*See Advt.*)

SILVERSMITHS, MANUFACTURING.

Osborne, Alf., 89, Spencer Street, Birmingham. (*See Advt.*)

Round, Jno. & Son (Limited), Tudor Works, Sheffield. (*See Advt.*)

WATCH IMPORTERS.

Fattorini & Sons, Bradford, Yorkshire. (*See Advt.*)

Stockall, Jas. J., 6 & 8, Clerkenwell Road, London, E.C. (*See Advt.*)

WATCH MANUFACTURERS.

Baume & Co., 21, Hatton Garden, London, E.C. (*See Advt.*)

Guye, P. & A., 77, Farringdon Road, London, E.C. (*See Advt.*)

Golay, C. H., 46, Myddelton Square, London, E.C. (*See Advt.*)

Nicole, D. L. A. & Co., 210, Goswell Road, London, E.C. (*See Advt.*)

Newsome & Co., The Butts, Coventry. (*See Advt.*)

Stauffer, Son & Co., 13, Charterhouse Street, London, E.C. (*See Advt.*)

Tripplin, J., 5, Bartlett's Buildings, Holborn, E.C. (*See Advt.*)

Vacheron & Constantin, 60, Chandos St., Strand, W.C. (*See Advt.*)

Yeomans, S., 48, Spon Street, Coventry. (*See Advt.*)

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Haswell, R. & Sons, 49 & 50, Spencer Street, Clerkenwell, E.C. (*See Advt.*)

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Keat & Co., 214, Goswell Road, E.C.

S. Ockenden, Chronometer and Watch Jobber to the Trade, 155, Goswell Road, London, E.C. Staffs, Pinions, Cylinders, Conversions, &c. Price List on application.

The

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The Watchmaker, Jeweller and Silversmith.

A Monthly Journal devoted to the interests of Watchmakers, Jewellers, Silversmiths and kindred traders.

Correspondence.—Correspondence is invited on all matters of interest to the trade. Correspondents will please give their full address in each communication, not necessarily for publication, but as a guarantee of good faith.

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Editorial.

ALTHOUGH at the time of penning these remarks, the present year has still a month to run, it is now so unlikely that our subject will undergo any material change in that space of time, or that we shall have fuller data to go upon, that we may as well look back at this stage in considering the trade of the year; more especially as we should prefer to commence the New Year without any such retrospect.

The official trade returns to hand, and the observations of our various correspondents and ourselves show that our former predictions concerning an increased volume of trade for the year 1888 have been largely verified. Everywhere are to be seen signs of bustle and business, where a few months ago all was desolation and despair. Never in the past history, (or, at all events, the recent past history) of the trades in which we are especially interested, have they passed through such severe crises, and, to their credit be it said, with so little loss of self-respect, and such determination to get through the difficulties which assailed them. There have been, it is true, a few noticeable exceptions (it is probably owing to their paucity that they have been noticeable), to an all-but universal noble example. But, as we more than once pointed out, the wild asseverations respecting a general decadence of English trade were only worthy of notice on account of the harm they were likely to do (and undoubtedly did), in outside quarters; the blatant shrieks of the panic-mongers being taken up and reiterated in public as confessions of impotence on the part of the trades themselves.

That the various fancy trades were in a bad way, it could of course have served no purpose to deny; but to blazon the fact publicly, and to couple it with charges of want of energy and enterprise on the part of home manufacturers as compared with foreigners, was a policy which can be described as nothing else than suicidal.

Happily things now wear a healthier aspect, and the general improvement in business is now so apparent that it may be assumed the veriest croakers will be silenced until the next period of trade depression brings them forth. Even now, however, there are not wanting pessimists who prefer to regard the present revival as a flash in the pan, which will be over with whatever accidental cause they may choose to attribute it to. For ourselves, we think there is not much cause for doubting that the improvement is going to be lasting—at all events, if the various trades take the lesson to heart of past experience, and profit by it. This experience has shown that where the English trades were weak (and we are now speaking more especially of the jewellery and watchmaking trades), was in a want of organisation among themselves; and to the shutting their eyes to what was going on immediately around them and elsewhere, by neglecting to take full advantage of the means of intercommunication and information afforded them by an intelligence department.

We do not think there are many members of the respective trades alluded to, conversant with the business conditions of the past, to whom the above propositions would appear exceptional; and knowing (of our own knowledge as the lawyers say), of numerous instances in which a reverse course has been attended with proportionally favourable business results—feel justified in offering them for what they are worth, as our explanation for the consideration of such of our readers as have not already grasped the situation.

As for the watch trade, the present activity is clearly traceable to the operation of the Merchandise Marks Act, and it is no use disguising the fact that every effort will require to be made in the future by English makers to maintain the position in which that measure has for the present placed them. We don't for a moment doubt their ability to compete successfully against all comers in the matter of manufacture, but they will have to bestir themselves by courting greater publicity, in which direction their rivals have hitherto shown them the lead.

The Board of Trade has issued a circular to the clock and watch trades, together with a form which the various firms are requested to fill up, giving a return of the rates of wages paid to employés, hours of labour per week, the numbers employed on October 1st, 1886, &c., &c., and also amount paid in wages in the year 1885.

This return is being prepared by the Board for the purpose of procuring such statistics of wages and other matters as is contemplated by the resolution adopted by the House of Commons in March, 1886, to the following effect:—"That in the opinion of this House, *immediate* steps should be taken to ensure in this country the full and accurate collection and publication of labour statistics." (The italics are ours.)

"It is obvious," the circular goes on to state, "that the value of these statistics will be greatly augmented, if by the co-operation of individual firms, manufacturers and companies, in supplying to the Board of Trade what information they are able to supply, the returns can be made to embrace the whole of the United Kingdom."

While fully appreciating any efforts, Parliamentary or otherwise towards the amelioration of the trades alluded to, it is not quite obvious to us, why a delay of over two years should have occurred between the passing of the resolution and the Board's effort to comply with it, nor is it equally obvious why October, 1888 should not have been substituted for the same month in an abnormally bad year.

At all events, it is quite clear that notwithstanding the little good such statistics generally are for practical purposes, the present return, which must necessarily be very incomplete, will be of even less value.

General Notes.

Mr. Councillor (and jeweller) Grayson was elected mayor of Tiverton on the 9th ult.

The law for obtaining patents in Switzerland (see September number "General Notes") came into force on the 15th ult.

Mr. Schoof has got back his chronometer. It has been found in the possession of a "dealer" named Webb, who stands committed to take his trial on the charge of receiving, &c.

Small ladies' watches are once more the order of the day. They are now made not larger than buttons, tolerably thick, with heavy cases. This fashion seems to have been brought about by the introduction of bracelet watches.

Those of our readers who may wish to patronise the Annual Ballad Concert in aid of the funds of the Clerkenwell Benevolent Society, are reminded that it is to take place on the 3rd inst. at the Agricultural Hall, Islington.

According to eminent philologists, there is no such thing as a "gutter" word. Up to the present, however, we have been unable to trace the etymology of "duffer." We now find it is a word used technically among pawnbrokers to express a person who offers in pledge goods "that are not what they seem."

"Gentlemen of the Jury, there is still another extenuating circumstance in favour of my client. He broke open a burglar-proof safe, a masterpiece of workmanship, valued by experts at £150, and this client of mine contented himself with £40 he found inside, and left the valuable safe to the owner."

The Anniversary Dinner of the Horological Club will take place in the club room, Northampton Square, E.C., on Friday, December 7th. Tickets, price 3s. 6d. each, may be obtained from any member of the committee, by or before the 4th inst.; or from the Hon. Sec., Mr. H. Bickley, 33, Half-Moon Crescent, Barnsbury, N.

The full report of the Sheffield bankruptcy case, which we publish in this issue will be read with mingled feelings by many in the trade, but should deserve the attention of all. As the matter is still *sub judice*, we reserve comment until the conclusion of the official examination. Meanwhile we commend it to the attention of our readers.

The Mid-London Exhibition of Art and Manufacture now being held in the lecture halls of the City Road Congregational Church, will remain open until the 5th inst. Various trade processes are shown in operation, and the exhibits include specimens of work executed by students of the London Horological schools. The church is situated near the canal bridge.

Mr. Thomas Maddock, watchmaker and jeweller, of Main Street, Frodsham, Cheshire, died after we had gone to press with our November number, of bronchitis. Mr. Maddock, who was in his 75th year, was the oldest tradesman in the town, having been in business there for upwards of half-a-century, and had during that period gained the respect and esteem of his fellow townsmen.

One of Messrs. Stauffer & Co.'s travellers was robbed last month in Glasgow of a parcel of 67 watches. Up to the present Messrs. Stauffer have recovered 16 watches and are in hopes of getting back a considerable portion of the remainder. The charge against two men for "receiving" same was dismissed.

Mr. J. F. Alexandra says that in setting a sapphire worth five guineas, Messrs. Backes & Strauss, of Holborn Viaduct, carelessly chipped and spoiled it. Messrs. Backes & Strauss declared that the damage was due to an inherent flaw in the stone. Mr. Commissioner Kerr, before whom the dispute came last month, couldn't settle it, so it will come before a jury.

At a meeting last month of the London Watchmakers' Association, Mr. Newman was, after a long discussion, re-elected secretary. The same meeting passed a vote of thanks to Mr. Brown, a workman employed by Messrs. Usher and Cole, for having got over the difficulty of constructing an entirely English complicated watch. This is the £300 watch manufactured by Messrs. Usher & Cole for Captain Penton, M.P., who was also thanked for coming forward with the order for the same.

In recognition of his valuable services to the Clerkenwell Vestry, and as a mark of his colleagues' esteem, Mr. Churchwarden Kellaway was last month entertained to a complimentary dinner at the Holborn Restaurant, at which he was presented with a valuable service of plate manufactured by Mr. Robert Stebbings, of 18, Myddelton Street, E.C. The morocco cases which held the plate are deserving of a word of praise, being highly artistic; they were manufactured by Mr. Arthur White, also of Myddelton Street.

A very important contrivance—the invention of an old experienced gold-mining expert—is shortly to be patented here. Its object is to extract gold from alluvial soil, or even from quartz, without the agency of water. If this can be accomplished—and from what the "*European Mail*" can glean there appears to be little doubt of the efficacy of the plan—it is not too much to say that the gold-mining industry will be quite revolutionised. There are vast quantities of gold lying about in various portions of South Africa, Australia, and New Zealand which cannot be touched owing to the scarcity or the absence of water—that most necessary factor in the work of removing the virgin metal from its earthy covering. We hope in a short time to be able to give full particulars of this new "dry-air" invention.

While the inventor is busily engaged with the preliminaries preparatory to introducing his machine to the public, a new Company, entitled "The Metals Extraction Company (Limited)," has been registered here with a capital of £100,000, divided into 100,000 shares of £1 each, for the purpose "of acquiring letters patent for the exclusive use in the United Kingdom of Great Britain and Ireland and the Colonies relating to improvements in the process of extracting gold by means of chlorine from auriferous ores, sand, and residues of gold washing, and other patent rights, licenses, and privileges relating to the same or other metallurgical processes."

Trade Injunction.—An action was brought on the 21st ult., in the Birmingham County Court, before the Deputy-Judge, by Laurence Emanuel, of Warstone Parade, jeweller, against S. M. Levy, of 76, Caroline Street, jeweller, to recover £50 damages for infringement of two registered designs, and for an injunction. Mr. Hugo Young (instructed by Mr. Solomon) appeared for the plaintiff, and Mr. Alfred Young (instructed by Messrs. Reece & Harris) for the defendant.—Mr. Hugo Young said that the action was for infringement of plaintiff's designs for metal matchboxes, one design being a swallow engraved on the case, and the other a bone. In had been arranged that an injunction should be granted on certain terms, defendant undertaking not to make any more of the boxes; and therefore the plaintiff would not further ask for damages or costs. Mr. Alfred Young said that the defendant would consent to the injunction, because he did not wish to make any more of the boxes. An injunction was accordingly granted.

We hear of a new French invention for enabling railway travellers to ascertain the name of each station at which a train stops. We have not as yet been favoured with any details in connection with the innovation, with the exception that it is some arrangement of clockwork mechanism with a dial on which the names of the various places appear. Should it prove of practical utility it will, doubtless, be well received by the public, although removing a fruitful source of anecdote in the curious and unintelligible cries with which railway porters delight to confuse the anxious traveller.

Mr. William Simpson.—Of our distinguished and esteemed correspondent, Mr. William Simpson, the *Academy* says: The Quatuor Coronati Lodge of Freemasons, which requires of its members either a literary or an artistic qualification, has this year been so fortunate as to secure a "worshipful master" who is possessed of both. Mr. William Simpson, the well-known special artist of the *Illustrated London News*, was installed in the chair of this lodge on November 8, being the festival of the Quatuor Coronati, or Four Holy Crowned Martyrs, the tutelary saints of the early Masons. Mr. Walter Besant, the treasurer, and Mr. G. W. Sheth, the secretary, were continued in their respective offices. It may not be generally known that this lodge has attached to it a literary society, or "outer circle" of members, composed of subscribers to its *Transactions*. This association has now reached a total of some 450 members. Papers are read at all the meetings of the lodge; and the next one, on "The Worship of Death," will be read by the newly-installed master on January 4.

The following explanation is given why the year 1900 will not be counted among leap years. The year is 365 days 5 hours and 49 minutes long; eleven minutes are taken every year to make the year 365¼ days long, and every fourth year we have an extra day. This was Julius Cæsar's arrangement. Where do these eleven minutes come from? They come from the future, and are paid by omitting leap year every hundred years. But if leap year is omitted regularly every hundredth year, in the course of four hundred years it is found that the eleven minutes taken each year will not only have been paid back, but that a whole day will have been given up. So Pope Gregory XIII., who improved on Cæsar's calendar in 1582, decreed that every centurial year divisible by four should be a leap year after all. So we borrow eleven minutes each year, more than paying our borrowings back by omitting three leap years in three centurial years, and square matters by having a leap year in the fourth centurial year. Pope Gregory's arrangement is so exact, and the borrowing and paying back balance so closely, that we borrow more than we pay back to the extent of only one day in 3866 years.

The Diamond Market.—The *Amsterdam* market remains unchanged since our last report. A small demand has continued throughout the month, principally for perfect white stones. *Rough and cleaved* good are in request.

As usual, the *Paris* sales are chiefly for the American market; the sale of finished goods has increased, the noticeable orders being for this market and the provinces.

The "Garth Castle," "Athenian," and "Hawarden Castle," brought smaller supplies from the fields during the month, which were all appropriated by the numerous buyers in the London market, while the "Athenian" is expected, as we go to press, with the mails of the "Tartar," which latter vessel met with an accident to her machinery.

Latest from *Kimberley* report: Market quiet, with prices unchanged.

Metals:—*Silver*—Is lower at 43d. per oz. *Copper*—Chili bars, £78 to £78 12s. 6d. *Tin*—Fine foreign, cash; Straits, £100 10s. to £101; Australian, £100 17s. 6d. to £101 7s. 6d. *Lead*—Spanish soft, £13 5s., sellers; English pig, £13 12s. 6d. *Spelter*—Ordinary brands, £18 10s. to £18 12s. 6d.; special, £8 12s. 6d. to £18 15s.; English soft, £19 5s. *Quicksilver*—Importers' price, £9 10s.; second-hand parcels, £8 12s. 6d. Markets generally steady.

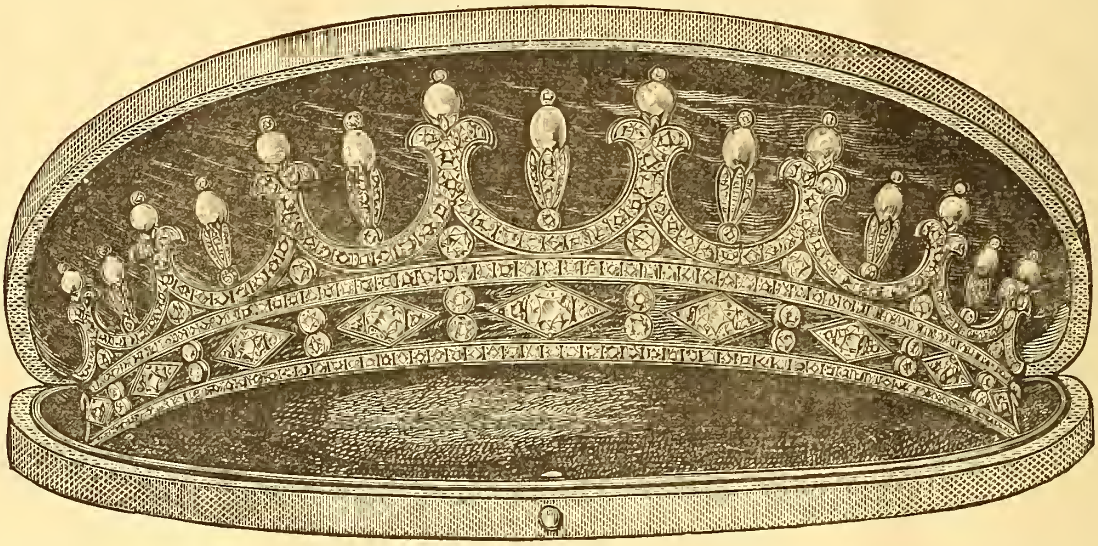
Trade Notes.

The chief aim of these "Trade Notes" is to bring to the notice of our readers anything really worthy of attention that is being made in the trade, and thus to benefit both manufacturer and retailer, by introducing the former to the latter and bringing to the buyer's notice either novelties that should not be overlooked or current goods of intrinsic merit.

Of the antique buckles, belts, clasps, and châtelaines, now so much in vogue, Messrs. A. E. Beck & Son, of 2, Bath Passage, Birmingham, manufacture and keep in stock over 1,000 different patterns of very chaste and neat designs.

Messrs. B. H. Joseph & Co., of Frederick Street, Birmingham, have just introduced to the market a transparent solution for preventing silver and other goods from tarnishing. The articles to be protected are dipped in the solution, which quickly dries hard, and leaves the appearance of the goods unchanged; it can easily be removed. Jewellers and silversmiths should sample this preparation.

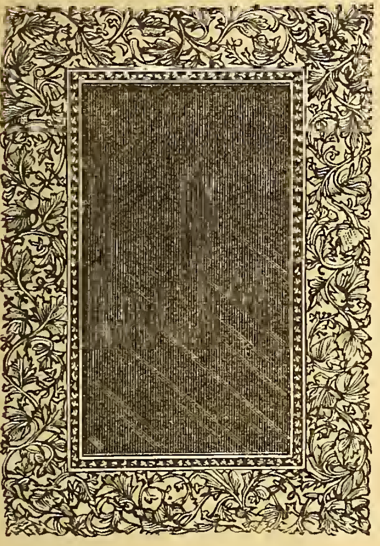
The very artistically designed and highly-finished tiara shown in the annexed illustration, is the work of Mr. W. Schuller, of 36, Poland Street, Oxford Street, but, as is well-known, a cut of the kind conveys but a faint idea of the beauties of such a piece of workmanship; they can, perhaps, be better imagined from the following details:—The tiara contains 494 of the finest brilliants, the centre stone weighing three carats. The pearls are fifteen in number and are also the pick of large parcels, the centre one weighing 23 grains. The jewel was made to the order of a lady of title, whose name we are not permitted to divulge, and will probably be worn at the next Drawing Room. Mr. Schuller is the maker of the Kimberley casket, presented to the Queen, of which mention was made in a former issue.

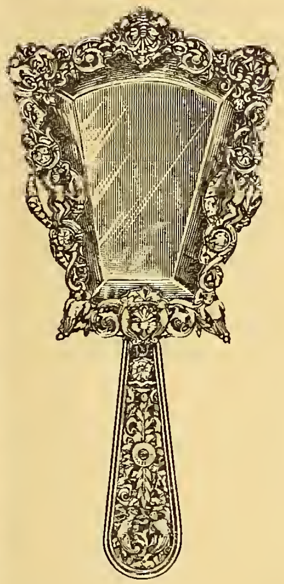


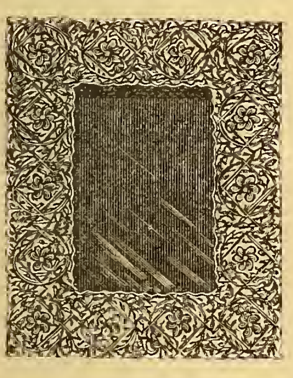
We have before us some of the watches manufactured by Mr. Alexander Edwards, of 88 and 89, Craven Street, Coventry, which he has made expressly for the colonial market, and for which trade they seem to us to be eminently adapted, being sound in principle, very strong, not likely to get out of order, and, if from accident they do so, they are constructed so as to be easily repaired by comparatively unskilled workmen. This last is an important point in watches that are intended for an export trade, as many manufacturers so well know. The departures in these watches may be summarised as follows:—A safety centre pinion prevents damage to the watch from the accidental breaking of the mainspring; in the event of the mainspring breaking, the barrel can be taken out without taking the watch to pieces. Strong cases with snap action and cap to movement effectually prevent dust or damp from getting to the movement; both winding and setting are done from the back, which has obvious advantages. The movement is a "Wycherley," and a well-made lever escapement with cut compensation balance should insure good timekeeping. Mr. Edwards has christened this watch the "Safest."

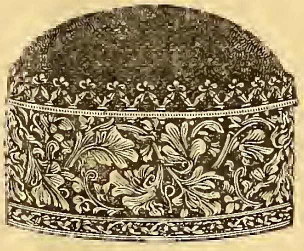
While in the neighbourhood the other day, our representative had an opportunity of inspecting a trophy which is to take the place of a challenge shield of county footballers. It is a worthy example of the silversmiths' craft, and reflects the greatest credit upon Messrs. Wilson & Son, jewellers, Carlisle, with whom the order was entrusted. Unfortunately we have been unable to obtain an illustration, but the following description will convey some idea of its merits. The shield (a combination of silver and electro) is of circular form and measures about 23 inches in diameter. Round the margin is a handsome border, the centre ornament of which forms itself into a series of oblong tablets to receive the names of the respective winners. This marginal device is broken at the four quarters of the circumference by a bold conventional ornament in high relief, which in the top quarter takes the form of a gold shield, upon which is emblazoned in coloured enamel the ancient arms of the capital of the county, surmounted by a crown and foliage of proportionate dimensions. In the centre of the shield is an effective medallion containing, in bas-relief, a representation of the Rugby game at its most interesting stage, while in the background may be seen the grand stand crowded with spectators. Surrounding this and upon a ground of burnished gold, are two branches of laurel in silver metal, the terminal points of which converge upon an ornamental tablet containing the title of the competition and the date of its inauguration. Beneath this arrangement and constituting part of the marginal ornament is another tablet, upon which are engraved the names of the officers of the Union. The shield is mounted upon silk plush of a rich hue and enclosed in an ebonised case to prevent tarnish or injury.

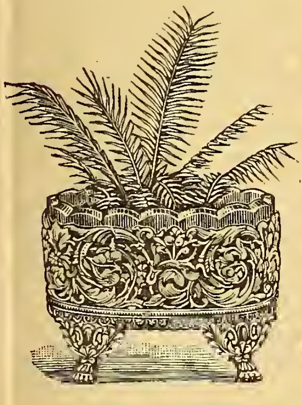
The growth and development of artistic design, and the appreciation and preference shown it by the advancing taste of the public is strongly exemplified in the works of taste and elegance manufactured in the form of photo frames, mirrors, brushes, pincushions, &c., &c., of which we give a few examples, and had the pleasure of inspecting, the other day, at the establishment of Messrs. King & Sons, of 222, Goswell Road, E.C. The rich pierced *repoussé* work of some of the caskets, cigarette and match boxes is something quite new, and it is not surprising they meet with a large sale. A useful novelty made by the above firm is a jardiniere consisting of a plated pierced *repoussé* scroll with a dark blue glass lining to receive water or moss for flowers, or as is now more prevalent, a fern or other light graceful plant suitable for table decoration. Of hand mirrors they have a number of patterns ; one of the most pleasing, which we illustrate, is designed with figures, in bas-relief, resting on and supporting a pierced scroll, terminating at either corner with conventional figures. Successful in relief and bold in design we noticed a mirror (also made as a frame, in various sizes) of striking excellence ; the pattern is a conventional holly leaf and scroll, yielding a contrast to some of the lighter and neater patterns, such as the narrow leaf scroll photo frames manufactured by them in large quantities, in sizes from the midget to the panel. Art manufacture having become a necessity of the age, attention is devoted to the production of such a variety of novelties in various forms of art styles as will meet the varied tastes of a large public. From the boudoir and drawing room to the adornment of the person—waist clasps, buckles and chatelaines are specialities, and deserve attention by the symmetry of the design, whether it be in the lighter and more delicate patterns, or on the other hand, the bolder and stronger. Plated mounted chatelaines and bags of new design were among the attractions we noticed, and jewellers in search of novelties for adding to stock carried cannot do better than pay a visit to Messrs. King's establishment.

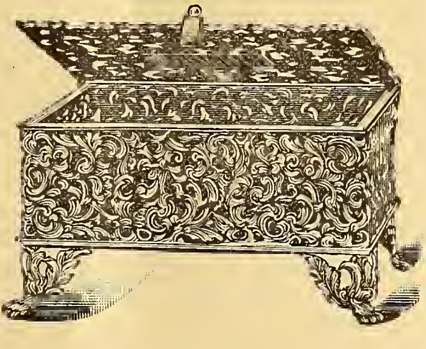




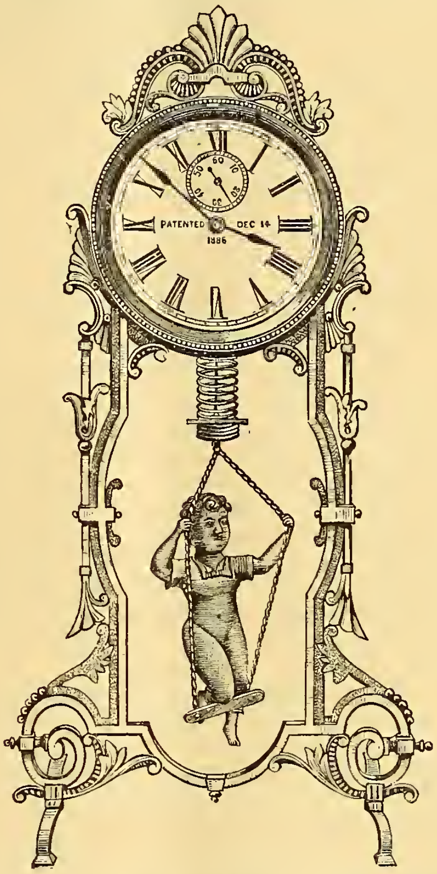




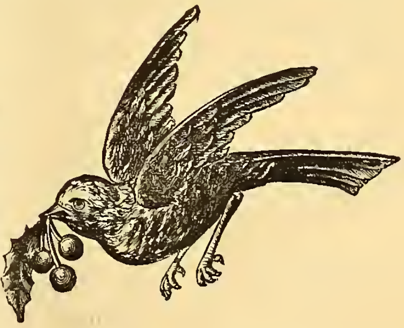




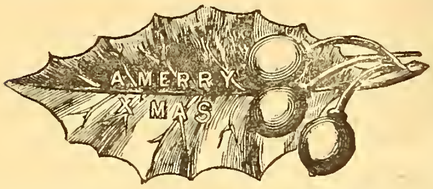
The illustration shows a new "jumping" timepiece brought out by the American Ansonia Clock Co. The escapement is a lever. A coil of the cylindrical spring takes into the notch of the latter and receives impulse at every escapement of the pallets. The clock is made to go faster or slower by means of the cross piece at the lower end of the spring, which alters the number of coils in action. It is a very simple and ingenious arrangement and (what is not always compatible with such ingenuity) is capable of being regulated closely to time. Mr. (or Messrs.) Stockall, of Clerkenwell Road, E.C., are the first consignees in this country.

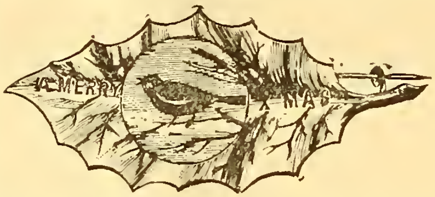


The New Christmas Card Brooch.—Considering the great rage the sending of Christmas and New Year's cards has become with all classes of society, it is to be wondered that a more lasting and useful souvenir has not been introduced in this direction. However, we have just seen a new idea brought out by Messrs. Booth Brothers, 43, Northampton Street, Birmingham (who by the way are always introducing novelties for the jewellery and fancy goods trade), in which a brooch, hairpin, or scarfpin of appropriate design, as shown in engravings, is mounted on a suitable card. This forms the Christmas



or New Year's card and is sent in the ordinary way, the receiver taking the article off and wearing it in the usual way as a compliment to the kind thoughts and wishes of the sender. They are made up in gold (coloured and bright), silver, silver-plate, and gilt, and can also be had in antique and oxidised finish. The idea is very taking and as they can be retailed from 1s. upwards, their sale is universal. Already large demands have been made on the resources of the manufacturers, both for home and foreign markets, and still larger are expected. They act also as a good window attraction and form a good introduction for other goods. No Christmas stock will be complete without a selection.





Birmingham News.

From Our Correspondent.

THE returns for November have hardly reached the figure expected by most of the jewellery manufacturers, as the preceding month promised a powerful revival, and expectations ran high; but although there is a certain amount of disappointment prevalent at the somewhat sudden destruction of the numerous "castles in the air," that were rapidly erected, and like some other "jerry" buildings that we occasionly hear about, as rapidly fell to pieces, yet there is no very great cause for grumbling, as the majority of houses are working full hours, and in most instances upon *boná-fide* orders.

* * *

One branch of the trade that has been in a state of stagnation for years is gradually—and during the last few months rapidly—coming to the front; I refer to that of Chasing and Embossing. The principal line that is the cause of this is that of "scent bottles," the lids or "tops" as they are called in the trade being richly embossed with scrolls, grotesques, &c., in high relief, and afford a considerable amount of scope for the art; and as these goods are turned out in immense quantities, all the embossers have their hands full, and, I suppose, are correspondingly happy. I am rather at a loss to know what authority has instructed our lady friends that for the present their scent bottles must have silver or gold tops, and that the said tops must be chased and embossed—but anyway, I am quite satisfied that such is the case, and only wish the same oracle would reveal to them some other way in addition to this of giving the jewellers and silversmiths a turn. No, I am not a bachelor, but I do like to see the ladies properly "rigged out" with the genuine article, because I know that they feel "so much better" when the "doctor" has prescribed silver-topped scent bottles, diamond rings, renaissance waist buckles, &c., and they have been to the jeweller's shop and had the "prescription made up."

* * *

The immense variety of goods made now-a-days by the Birmingham jewellers as compared with former times is really quite overwhelming. No local trade has, I suppose, so extended or undergone such changes as the jewellery trade has during the last 25 years, not only from a commercial, but also from an artistic point of view, while from a commercial standpoint many of the alterations are regretted and are subjects of daily complaint and annoyance; on the other hand the vast improvements in art work (although much has been said to the contrary) affords ground for general congratulation and for special praise to individual efforts that have been made from time to time by various leading manufacturers. Twenty-five years ago the factor waited upon the manufacturer when he wanted a parcel of goods, and considered himself a lucky man if he got what he wanted; factors or their buyers would wait their turn at the manufacturer's warehouse whose goods were in demand and offer high prices and cash down to secure a parcel: and it has happened more than once that the first buyer has taken the lot (stocks were not so large then) and the lucky maker has been obliged to step out on to the landing and with scant apology explain that "he was very sorry but the stock had all gone." Alas! how are the mighty fallen; the tables are turned with a vengeance; the manufacturer has now to hunt in every "hole and corner" for a customer, and submit to being snubbed at every town, only to find that some enterprising competitor has just been in before him, and offered the same goods at fifteen per cent. less cost, or has left a large parcel on "appro" for an indefinite period, so that there is nothing for it but to get on to the next place with all possible speed, and then find himself at the wrong end of a dozen or so of "jewellers' travellers" all anxious to get a line in the day-book like himself; where, after waiting two or three hours partly in the street and partly in a draughty passage, and just as he is on the tip-toe of expectation (his being the next turn in), a clerk opens the trap and in tones of importance announces, "the governor won't see any more to-day;" at which cheering news he orders his porter (who has walked a few dozen miles or so up and down the foot-path to keep warm) to "take the stock home," and he follows in the rear with a strong sensation of shivering down his back, a bad influenza cold fast coming on, and a powerful inclination to strangle the first jewellers' factor that comes in his way, his only consolation coming about two months after, when that factor pays two-and-sixpence in the pound, and all those lucky dogs that sold a parcel have faces as long as their purses ought to be.

* * *

Although several old firms have closed their trade during the last few months, their signs taken away and their places know them no more, yet this has not in any way lessened the competition, as several new ones have come to light or opened new branches just to keep up the balance of affairs. One of these is Messrs. Ernest Hyde & Co., diamond mounters, Vittoria Street, Birmingham, a branch of Messrs. Hyde & Sons, Warstone Lane; they have just put down a staff of about twenty pairs of hands and are open for orders in any branch of diamond mounting.

* * *

Another new venture is that of Mr. Pennington, Vyse Street, who makes a speciality of mounting all kinds of glass ware in silver and electro-plate.

* * *

Mr. W. J. Pellow has removed from Vyse Street to more commodious premises, No. 28, Spencer Street.

The Burmah Ruby Mines.—In reply to a question by Sir R. Lethbridge in the House of Commons last month as to whether the Government recognised the preferential claim of Messrs. Streeter to a lease of the mines, and whether any report on the subject had lately been received, Sir John Gorst said the Government have never recognised any preferential claim on the part of any person to a lease of the Ruby Mines. Reports had been received, and would be laid on the table when a lease has been granted.

The Intercolonial Publishing Company, Limited:—Publishers of the *Eastern, Australasian and South African Journal of Commerce*, and of the *Periodico de Español, Mejicano y Sud-Americano*, have removed to Intercolonial House, 131, Leadenhall Street, E.C. The new premises contain large reading, reference, and conference rooms for the convenience of merchants and others visiting London, and provide a centre from which all information upon matters of British, Colonial and Intercolonial trade may be obtained free of charge to clients and correspondents.

Sheffield Notes.

From Our Correspondent.

The Municipal Elections with which the month opened in Sheffield were only interesting to manufacturers, as such, by reason of the prominence given to the question of False Marking. The question itself, of course, is happily settled, but that need not prevent aspirants to municipal honours making a little capital out of it. Nor did it: but the result showed that the cry is played out. Two years ago it was powerful enough to place a candidate, who had identified himself with the exposure of the frauds, at the head of the poll in a ward where politically speaking he had not the ghost of a chance. Now all this is changed, and things have found their level;—tory wards going tory, and liberal wards going liberal, in spite of the frantic efforts of everybody in general to claim credit for the beneficent legislation on the subject. This gave rise to rather a funny incident in the Park ward, where the Hon. Bernard Coleridge, M.P. for the Attercliffe division of the borough was holding forth on behalf of a certain candidate. He was telling the electors about a deputation of which he (Mr. Coleridge) and Sir Henry Stephenson, then Mayor of Sheffield, formed part, and which waited upon the Home Secretary two years ago on the subject of False Marking. Warming with his theme he described in impassioned language a "stirring speech," which he said he delivered to the Home Secretary, and under the influence of which "the faces of Sir Henry Stephenson and Mr. Carter visibly lengthened," these gentlemen being understood to favour a different mode of solving the problem to that advocated by Mr. Coleridge. The mysterious part of the affair, however, is that every one of that deputation, which was a large one, is quite certain that Mr. Coleridge, in spite of the circumstantiality lent to his story by the "visibly" lengthened faces, made no speech at all on the occasion in question. The demand of a scoffing and ungrateful public for an explanation has hitherto been met by an attitude of dignified reticence worthy of the member of an important constituency like Attercliffe.

That the present system of Hall-marking is an unmitigated nuisance may be admitted at once, yet I cannot help thinking that Messrs. Sibray, Hall & Co. made a mistake in entering an action against the Goldsmiths' Company of London for the return of the fee charged by them for work which they ultimately did not perform. There can be no doubt that in this instance the Goldsmiths' Company were as honest as the Act of Parliament would allow them to be. They got the money (according to statute, payable in advance) for the Hall-marking of a silver trumpet: they paid the money to Government (also according to statute) and afterwards did *not* mark the trumpet, on the ground that it was soft soldered instead of hard soldered, as required by the Act of Parliament. This contention Messrs. Sybray & Hall seem to have disputed, but their assertion that the same trumpet and in the same condition was marked without demur the next day in the Assay Office at Sheffield was not of itself proof that they were right. Every silversmith in Sheffield is aware of the erratic practice of the two Assay Offices in this respect—articles being refused at Sheffield and subsequently marked in London, and *vice versâ*. It is easy, of course, to be wise after the event, but if it was worth while to take action in the matter at all it was necessary that all progress with the trumpet should be stopped, and that it be produced in court in the same state in which it reached the Goldsmiths' Company, when the matter could have been settled in five minutes. Failing this the verdict of Mr. Commissioner Kerr might have been anticipated.

Messrs. Sybray, Hall & Co. are not the first by any means who have lost their tempers over the doings of the Assay Office. Silver goods are as a rule wanted in a hurry, and it is no uncommon thing for goods to be sent up to London because there is not time to wait for the specified days on which alone they can be marked in Sheffield. When this course is not taken, manufacturers will sometimes do as much as is possible to do to an article before sending it to the Assay Office so as to lose no time. The article may be elaborately engraved, which, of course, presupposes buffing, and in this case a small piece of metal will be left on some convenient part for testing purposes. It is no unusual thing for this piece of metal to be entirely ignored and the article scraped in its most finished part. Sometimes when an article is of a very delicate character, it will be accompanied by a request to put the Assay mark in a particular place. This reasonable enough request will often have the effect of getting the article completely knocked out of shape, so that the young men of the Assay Office may display their independence. All these things are well known but what has yet to be learned is the remedy for them. The days of the Assay Office are numbered as soon as a feasible means of getting rid of it can be agreed upon.

It is many a year since so much animation was experienced in the electro-plate trade as at present. When firms like Dixon & Sons, with such facilities for turning out enormous quantities of work, talk about being "pulled out of the place," things must really be on the mend. It is quite cheering in the dull November nights to see the gas blazing in workshops which last year were dark and silent shortly after teatime. The large number of unemployed and still larger number of partially employed workmen are gradually being absorbed by the different factories, and scarcely a day passes but what the columns of the press contain advertisements for workmen in one or other of the numerous branches of the trade. So many sanguine expectations have been falsified of late years, that perhaps one might be excused for being rather dubious about the continuance of this state of things, but certainly appearances at present seem to indicate that the staple trades of the town are entering upon a period of considerable prosperity.

The mention of the staple trades of the town suggests the question "What are the staple trades of Sheffield?" Thirty years ago the answer to that would have been "Cutlery and Electro-plate." About that time, however, the steel trade began to expand, and along the valley of the Don arose a new town devoted to the "heavy trades." Here within a few years the first merchant princes of Sheffield, the Browns and Firths, amassed their fortunes, and the light trades took relatively a second place. The old staple trades, however, are coming to the front again. There will be no more sudden expansions of the heavy steel trades, which have reached their utmost limits at all events until the ship canal is made. This scheme, by the way, has taken definite shape and the preliminary notices have just appeared, preparatory to the introduction of a bill in the ensuing session of Parliament.

The vital question of railway tariffs, which is the foundation of the ship canal scheme, although, of course, mainly affecting the heavy trades, is not without its interest to electro-plate manufacturers. This was shown by a question put at a recent meeting of the Chamber of Commerce by Mr. C. Belk. It seems that although liberally enough treated in the matter of sending electro-plate goods *out* of Sheffield, manufacturers have to pay a higher tariff for the same class of goods coming *into* the town. Mr. Belk asked whether this anomaly was likely to be rectified when the Railway Rates Act came into force; a question which the president evidently could not answer off-hand, but which he promised to take into serious consideration.

The Cape Diamond Trade.—According to a report of the German Consul at Cape Town, the South African diamond trade last year exceeded that of the previous year by 463,869 carats weight and £737,174 in value. In 1887, the export was 3,598,930 carats valued at £4,242,470, against 3,135,061 carats worth £3,504,756 in the previous year. The produce of the different mines was as follows:—Kimberley, 1,410,207 carats valued at £1,410,207; De Beers, 1,014,048 carats valued at £1,014,048; Dutoitspan, 696,576¼ carats worth £987,283; Bulfontein, 602,246 carats worth £612,962; St. Augustine's, 197 carats valued at £250.

The Failure of Sheffield Jewellers.

EXTRAORDINARY REVELATIONS.

THE adjourned examination of Messrs. Henry John Brown and Edwin Francis Brown came on for hearing, at the Sheffield Bankruptcy Court, before his Honour Judge Ellison, on the 22nd ult.

Mr. H. J. Brown was first called, and in answer to the Official Receiver, he said that he and his brother succeeded to his father's business in January, 1881. They kept a ledger, a cash book, day book, and stock book. His brother and his clerk looked after the books. As far as he knew the books were perfectly correct. They did not know what amount of capital they had on January 21, 1881, but on November 30, 1881, a balance sheet was prepared. From that balance sheet it appeared that their profits from January 21 to November 30 were £613 10s. 8d. He did not know exactly how much he drew out during that period.

The Official Receiver: Did you draw out £270 13s. 3d.?—Perhaps so. My brother drew out £216 8s. 3d., or £54 5s. less than myself. The capital shown on November 30, 1881, was £1,271 12s. 5d. for myself and £1,255 5s. 8d. for my brother, making about £2,526 altogether. We had another balance sheet drawn up during the following year, but I don't know where that is. The balance sheet for 1883 shows that the profit was only £123 13s. 7d., but that small amount was to some extent accounted for by the fact that we spent £460 in an alteration in the shop.

The Official Receiver: Was your capital on December 31, 1881, put down at £497 3s. 11d.?—It was.

So in two years your capital had decreased by £774? —It had.

What did you do with all that money?—I have accounted for it as well as I can. In the first two years we had £650 to pay in connection with my father's testamentary expenses.

But you paid 15s. in the pound in connection with your father's liabilities, and took the estate?—We did; but we had a number of expenses to meet. We paid £168 for lawyer's expenses, and £130 for the accountant.

But the account made out shows that when you took to the estate you allowed £211 for expenses?—I did not know that. My brother will be able to give you every information on that point.

In 1882-3 I believe you drew £997 14s. 8d. out of the concern?—I suppose that is so.

You also had a quantity of goods out of the shop; what sort of goods were they?—I cannot say.

From 1884 to June, 1888, you have received goods of the value of £133 15s. 3d.?—I cannot say how much they would amount to.

What has become of them?—I could tell you if you would name them. My brother kept the books, and had full charge of them; although I was senior partner I left them entirely to him.

Is it not a fact that in December, 1884, you instructed Mr. Hubert Smith to prepare a balance sheet; he commenced to do it, and then he was stopped because he said it was not favourable?—No, certainly not. Mr. Smith did commence to make a balance sheet, but he was not stopped for the reason you say.

Did not Mr. Smith warn you about your withdrawals?—He did not.

Did he not tell you you would come to grief if you went on at that rate?—I don't think it was said to me; it might have been said to my brother. We have had no balance sheet since 1883.

Have you done anything in accommodation bills?—About £250.

Who were the bills drawn by?—They were drawn by Mr. Roe, and accepted by myself and my brother. The exact amount may be £231. Roe got them discounted and handed me the money. We had a meeting of creditors in London. I did not know that we were insolvent until I saw the balance sheet at the meeting in London.

Do you mean to say that you were not aware of the fact until then?—I was not. That was on August 11. On August 2 had you not a conversation with Roe about your position?—I had some conversation with him, and I told him that my brother or his wife had sent in a writ for £1,500. I do not know how many bills are yet unpaid. I did mention to Roe about the bills that are yet running. Roe did not hold anything as security up to August this year.

What did you give him on August 2?—I gave him goods that cost me £26 as collateral security. I thought he had helped me before, and I ought in fairness to give him some security for the bills then running.

Then you gave him preference?—Well, I suppose I did.

Have you any other accommodation bills?—No sir.

Have you pledged goods from the shop?—I have.

When did you commence to pledge these goods?—In April this year.

Have you not pledged goods since 1883?—My brother may have, but I have not.

You seem rather anxious to put everything on to your brother?—No, I do not.

Have you borrowed money from Mr. Bedford?—I borrowed £50 from him in August, 1887.

What did you deposit with him as security?—I gave him two gold watches and a diamond pin. I deposited these as security.

Well then what did you mean by stating that you did not deposit anything until April this year?—I had forgotten that.

Did you borrow another £50 on November 28, 1887, and deposit as security with Mr. Bedford, a diamond, pearl and coral pendant, a gentleman's gold Geneva watch and a gold albert?—I may have done so.

Did you on January 25 of this year give to Mr. Bedford as further security a diamond locket, a gold necklet and other goods to the value of £27 15s., without any loan whatever?—No, certainly not.

Did you in April deposit with him as further security a lady's gold lever watch?—Very likely; but I cannot say that that was without getting any money. I may also on May 28 have got a further £32 10s. from Mr. Bedford and deposited a diamond bracelet, a diamond brooch and other goods to the value of £44 10s. On July 11, I might have received another £50, for which I may have given Mr. Bedford as security a diamond bracelet, a diamond brooch and other things which cost me £55.

Can you say which of those goods were paid for?—I cannot. It is very likely I also handed another gold English lever and a gold albert to Mr. Bedford.

It is a matter of very little note or importance, I suppose, whether you did or not?—I did it for the benefit of the firm; to meet the liabilities.

Then you were in such a position that you could not meet your liabilities all this time?—There was no doubt about that.

Has any of this money been paid back?—Not that I know of.

You had had in all £182 10s. from Mr. Bedford, and have deposited goods that cost £246 10s. 0d. with him as security?—It is very likely that that is so.

Have you also pledged articles at pawnbrokers?—I have. The first ticket I have is for March 24 this year, but those were pledged by my brother. The next is for April 17, when I deposited a diamond ring which cost about £11 with Mr. Wright, and got £7 10s. It might have cost £12 10s. Perhaps it came from Wilmot's, of Birmingham, and was not paid for. I believe it was included in a bill drawn on April 1 for six months, which has not been met yet. The next thing pledged by me was a gold English lever half-hunting watch, on April 18, with my brother-in-law, Mr. Nixon, for which I got £15. I don't know whether it was paid for or not. The next was on July 19, when I received £45 from Mr Nixon for a gold English lever watch, a ruby ring, a diamond pendant, diamond ring, diamond bracelet, and other things. The lever might have been bought from Coventry, and cost £12 10s., and perhaps the diamond bracelet was got from Brown & Sons, of London, and cost £15. I cannot say whether they were paid for or not. I do not know whether they were included in a bill dated February 15, and I don't know whether that bill has been met or not. The next articles pledged were on July 26, when I got £25 from Mr. Nixon for a gold hunting watch, a gold albert, a gold locket, and a gold watch. The hunting watch may have been bought at London, and it might have cost us £27 15s. I believe it did. It was included in a bill drawn for five months on July 21, and is not therefore paid for yet. The lady's gold Geneva cost £3 2s. 6d., and I believe it is included in a bill drawn at five months on July 17, and not met yet. The ticket for March 24 this year is my brother's transaction. The next of mine is May 22, when I pledged a gold watch and a gold hunter for £14. The hunter may have come from Guye and Co., but I think not. The price of it would be about £14 5s. The other watch, I believe, was a second-hand one. I don't think there were any more transactions of that kind.

Did you not get any money from Mr. Fearnyhough in July?—My brother did.

Have you, or had you a creditor at Nether Edge named Le Pla?—I had, I owed him about £17. I let him have a lady's gold watch for £10 and paid him the balance. The watch cost me about £6 or £7. We were about that time calling a meeting of our creditors. I let him have the watch on account of my debt. The item should be entered in the books in Le Pla's name and not mine. My brother had charge of the books.

The Official Receiver: Oh that brother; his fault again!

Did you pawn a guard at Turner's?—I did, but it has been redeemed. The £4 I got for it I paid Le Pla, as part of the balance I owed him.

Who has the guard now?—It is in the hands of Mr. Swift, of Messrs. Swift & Ashington.

What is he doing with it?—I suppose he holds it as collateral security for a portion of his costs.

Has Mr. Swift received anything else?—He has; a gold watch and two silver watches. I deposited these things just before I went to the meeting of creditors in London.

Were you indebted to a person at Nether Edge named Mr. Griffin?—I was. I owed him about £7 or £8. I sold him a watch for £9; it cost me about £7. The clerk entered that to me. I let Mr. Griffin have the watch to wipe off the debt I owed him. It was my own private debt.

Did you owe Mr. Jno. Hoyland, Nether Edge, anything?—Yes, I owed him about £21. I let him have a clock for the amount. I had had the order about six months before I executed it. I let him have the clock in July. I don't think it was in August. That was put down to my private account.

Did you on August 9 take from the shop a quantity of stationery in a cab?—I did not. I took a little stationery in connection with a watch club.

Why didn't you give it up?—I can do so, but it is really only waste paper.

Did you take anything else away?—No.

Did you not take a travelling jewellery case away from the shop?—Oh, yes; I believe I did—but I did not remember until you reminded me. It was a very old case. It might have cost six guineas, but it is only now worth about £1.

Then you mean to tell us that although you had had to pawn these things and borrow this money you did not know that you were insolvent until the meeting in London?—I did not. I thought I should get over a temporary difficulty.

Did you assign any debts to anyone as security?—I did to Mr. Swift, the solicitor, and Mr. Holmes, accountant. About £50 to Mr. Swift, and I don't know the amount to Mr. Holmes.

You said you did not give Mr. Swift anything except what you mentioned before?—I expected you would ask me this question. Joseph Dyson has also got a deposit of about £20 security for accommodation bill. I forgot to mention before that he had drawn two or three bills. I gave him this security two or three days before the meeting in London. I had had a number of letters from the Bank about the account. I deposited one gold watch and two lockets with Mr. Garlick as security. They were old stock.

Now, is there anything else?—Not that I know of. If you can remind me of anything I will tell you. In answer to the question as to the cause of the bankruptcy, my brother states that it is due to a falling off in trade, and to my taking more money than the business would allow and also taking stock to meet private accounts. I say it is owing to a large quantity of the jewellery having gone out of fashion and general depression. I have not taken more out of the firm than my brother, because he kept a clerk to do the books. I think my brother ought to have paid the clerk. The statement shows that since 1881, I have received £3,081 19s. 4d., and my brother £2,350. My furniture belongs to my wife. I gave it her just before we were married.

Examined by Mr. Neale: My father's estate showed 20s. in the pound, but the creditors accepted 15s. in the pound in order to avoid law costs.

At this point the examination was adjourned until December 20.

Advice to Young Watchmakers.

By P. S. Bartlett.

THE construction of a watch depends entirely upon how it is made; the wheels have nothing to do with the case. A small watch will keep as much time as a large one and sometimes more. The reliability of the watch as a time-keeper depends upon how big a liar the owner is; there is no exception to this rule. In order to be a good watchmaker it is not necessary to know anything about a watch; you must know how to shake a watch, look wise and hold an eye glass; if you cannot look wise try some other business. The proper thing to do when you do not know what ails the watch is to say the mainspring is broken; this will give the party confidence in you and show him you understand the business; all first-class watchmakers keep a broken mainspring on their bench to show the customers when they come in what ailed their watch. Some watchmakers will say the watch is dirty, but as this is a reflection upon the owner it does not take so well. The regular price for repairing a watch is three dollars, it makes no difference what you do to it; some will take out three or four wheels and then charge the owner three dollars for what there is left. This is not right, as it lowers the high moral tone of the business, and will eventually lead to deception. Some people have great ideas what a watchmaker can do. A young lady once brought us a very large, old-fashioned bull's-eye watch and wanted to make two small ones out of it; one for her and one for her sister. We told her we could not do it, and she left us with a poor opinion of our skill and ability; thus is love's labour lost and truth crushed to the earth. But do not be afraid of telling the truth; you may get caught at it some day and then you can wear diamonds. If any customers complain of your prices, tell them that the skill and dexterity required in the manipulation of the fine and intricate parts of so costly and beautiful a watch is hardly commensurate with the importance of the object required, and that if they ever wish to sell the watch you will give them two dollars for the first chance to buy it. You can always guarantee a watch to run within one second a year, but state that it will take time to get it regulated down to it: the man will die or the watch will meet with some accident before you get it done, so you are safe in saying so. Never have a watch done the first time the owner comes for it, as that will give away the business, and he will think you have not done it well, or that you have not much work, or it was an easy job. The most difficult thing to do to an old watch is to get the hayseed out of it and not lose any. It is important that you should be "the only reliable dealer in town," and "the best workman on both sides of New York;" this you can do in the daily and weekly papers; also that you should come from the watch factory; Cloudman can get you through in twenty minutes, if you can keep up with him. Watch oil comes in pint and quart bottles; pints are twenty-five cents, quarts are forty-three cents. It is made from the seeds of the sunflower at Los Angeles, Cal. For tools you will need a grindstone, a monkey wrench, a hatchet and a lead pencil. With these few hints and two quart bottles of watch oil and 5,000 dols. in cash an energetic young man can start in business.

Board of Trade Returns.

THE clocks and parts thereof imported during October valued £50,812 In the same month of last year the amount was £36,891, and in 1886, £30,512.

The following shows the sources of supply :—

August	1886	1887	1888
From France	£18,723	£20,049	£21,674
„ United States	£4,812	£6,170	£11,692
„ Other Countries	£6,977	£10,672	£17,446

For the ten months ending October the imports of clocks amounted to £370,935. For the same months of last year, the value was £315,431, and for the first ten months of 1886, £299,792.

The watches and parts thereof imported last month reached a total of only £49,880, in comparison with £65,698 for the October of last year, and £70,283 in the same month of 1886. The ten months of this year give a total of imports of watches of £496,025. The same period of last year gave £604,580. The first ten months of 1886, £564,238.

The plate, plated and gilt wares exported during October amounted to £44,505. The same month of last year the value was £40,787. In October, 1886, £35,266. For the first ten months of this year the total has reached £311,390 in comparison with £256,341 in the same month of last year, and £289,575 in that of 1886.

The total value of imports of every description for October reached the total value of £35,022,135. For the same month of last year it was £30,550,307, and for that of 1886, £29,054,399. The ten months of this year show a record of imports of £313,635,766, against £294,953,817 in the same period of last year, and £285,468,148 in that of 1886.

The exports of British and Irish produce for last month are valued at £20,893,506, in comparison with £18,736,201 for the October of last year, and £18,224,823 for that of 1886. The ten months of this year give a total of exports amounting to £195,125,048 against £181,835,615 in the same period of last year, and £177,740,793 for the first ten months of 1886.

From the above returns it will be seen that if the trade of the country is not yet quite what could be wished, still there has been a decided improvement on that of the last two years. Both imports and exports show a corresponding increase, the only item in the return which shows reduced value being foreign-made watches. This, however (notwithstanding the opinion of economists, who tell us that increased imports means increased trade, and *vice versâ*) will not be grumbled at by English watchmakers, who know it to be the result of recent legislation, and can console themselves with the knowledge that it is simply a transference of trade from one branch to another, as it is mainly from one country to another. The most reliable and assuring part of such statistics as the above is the *gradual* increase in the volume of trade.

Another Hall-Marking Question.

IN the City of London Court on October 31, Messrs. Sibray, Hall & Co., of St. Mary's Road, Sheffield, brought an action against the Goldsmiths' Company, of London, to recover a statutory fee plaintiffs had paid for hall-marking.

Mr. Tattershall, solicitor, appeared for the plaintiffs ; and Mr. J. C. Graham, barrister, represented the defendant company.

In opening the case, Mr. Tattershall said this was an important matter to the trade in Sheffield, Birmingham and other places, though the amount claimed was very small. In August last the plaintiffs sent from their London agency a silver trumpet to the Goldsmiths' Hall to be marked, and the officials refused to mark it on the ground that it was soft soldered instead of being hard soldered. The plaintiffs disputed that contention, and claimed to have the fee which they had paid returned, on the ground that they had paid the same amount the next day in Sheffield, where the trumpet was duly marked without demur.

His Honour, Mr. Commissioner Kerr: You say that the representation on which the defendants rely is untrue?

Mr. Tattershall: Certainly. I admit that under the statute the defendants have the right to break a defective article ; but there is nothing in the Act which entitles them to retain the fee after a refusal to mark.

His Honour : But you will observe they give a *primâ facie* good reason for not marking. I presume they are perfectly willing to do the work if you will solder the trumpet according to the requirements of the Act of Parliament.

Mr. Graham : Quite so. The company's officials have entered and assayed it, and they are ready to stamp it provided the statutory conditions are complied with.

Mr. Tattershall : But why should the Company retain the fee on the ground, which we contest, of there being soft instead of hard soldering used ? They have not done the work.

Mr. Graham : By the Act of 24 Geo. III., Section 5, it is provided that for marking or assaying certain duties shall be charged. These duties or fees are demanded in advance, and in this case the money sued for has been paid over to the Government in the ordinary course.

His Honour : The fee is demanded as a preliminary step under the statute, and the money goes for the use of the Crown ?

Mr. Graham : Precisely; that is the company's contention, and the money has been paid over.

Mr. Tattershall : I argue that while the defendant company may break defective articles, they are not entitled to retain fees for hall-marking which they have refused to do, and have therefore put my clients to the extra expense of getting the hall-marking done at Sheffield.

His Honour : The defendants say they are bound by statute to impose this fee before even touching the articles sent to them. The law seems to be clear against you. I must therefore find for the defendant company.

Mr. Graham : I ask for costs on the higher scale, as this is a case of public interest.

His Honour : The amount in dispute is only 7s. 4d., but it implies an important point for silversmiths all over the country. I will therefore grant your application.

In a second case by the same plaintiffs against the Goldsmiths' Company, in which it was contended that the handle of a coffee-pot sent to be hall-marked was missing when the parcel of goods in which it was contained was returned to the plaintiffs, the learned judge found for the defendant company, on the ground that there was not sufficient evidence of delivery in the first instance.

WATCH AND CLOCKMAKERS' ASYLUM.—At the recent annual visit of inspection to this Institution at New Southgate, there was a large company, including Captain Penton, M.P., Mr. J. H. Rose, M.A. (vicar of Clerkenwell), and several members of the Clockmakers' Company. After inspecting the houses of the pensioners the company assembled in the Board-room, where, under the presidency of Mr. Woodman, Captain Penton, M.P., spoke with pride of the clock and watchmakers being amongst the first—if not the first—trade society which had provided an asylum for aged and decayed members. The workmen themselves, too, had made the beginning, by collecting, through 1s. subscriptions, an amount of money sufficient to build the first house. There had followed generous donations from the Worshipful Companies of Clockmakers, Goldsmiths, Cutlers, Drapers, Merchant Tailors and others, the result of which was that at the present they had accommodation for 24 inmates, the females receiving £15 annually, with coals and gas ; and the males £24, with the additional privileges. This, he said, was a noble example of helping one another, and he was glad to be able to thank the founders of that Institution who at present flourished amongst them—viz., Messrs. Christopher Rowlands, E. J. Thompson, George Moore, Clarke, and S. A. Brooks. Other members of the craft addressed the meeting, including Mr. J. J. Stockall, Mr. Baxter, Mr. Sping, Mr. Vine, Mr. Houghton, Mr. Barnsdale, Mr. T. Taylor, and Mr. Reeke.

Midland Jottings.

By J. W. Robertson-Scott.

The best-abused town in Britain has been in high feather this past month. The Jubilee of "Brummagem's" incorporation and the high jinks of the politicians have held the field together, and a good deal of attention has been directed towards "the chief town in England for metallic manufactures."

It is wonderful, even in these days, how few of the general public have a trustworthy knowledge of the Midland metropolis and erstwhile "hardware village" and "town of gardens." If one turns to Dr. Brewer's "Phrase and Fable"—one of the best known works of reference of the sort—we find it declared that "Birmingham, once called Brumwicham, is the great mart and manufactory of gilt toys, cheap jewellery, imitation gems, mosaic gold, and such small beer." Other people, not compilers of dictionaries of reference, have the notion, or something like it, that "Brummagem" is a grimy, Ishmaelish community in the Midlands, engaged in the manufacture of imitation jewellery, screws, cheap-jack's wares, and bad money. How few ordinary folk know, for instance that the "H" on a number of the coins of the realm is the mark of Messrs. Heaton, of Birmingham, at whose mint tons and tons of money for our own Government and various other Governments have been made! It is not so long since that someone wrote to the *Times*, complaining, in view of the number of penny pieces in circulation bearing the letter "H," of the enormous amount of bad money there was about, and pointing out the audacity of the "shise" coiners in particularising the production of their illegal mint by stamping their initial on it!

The history of Birmingham furnishes a strange coincidence, of some interest to makers of metal ornaments of one kind and another. In 1642, when Charles I. passed through the town, it declared "a more peremptory malice against his majesty than any other place"; while in answer to Prince Rupert's overtures, the next year, the people fired on his men, "and in opprobrious speeches reviled them, calling them cursed doggs, devilish cavaliers, popish traytors." Then Prince Rupert "assaulted, sacked and burned the town," and it was found that the inhabitants "were they who first stirred up those of Coventry to defend it against the king's forces; that from thence they sent 15,000 swords for the Earle of Essex, his forces, and the ayd of that Party, and refused to supply the king's forces with swords for their money." Now, the curious thing, in face of these facts, is that it was the foibles of the Gallic Court of Charles II. which were the making of the devoted Parliamentarian town. The steady advance of Birmingham to position and influence dates from the Restoration, when a large demand arose for the arms, accoutrements, jewellery, and petty nick-nacks, manufactured in the "hardware village."

All mechanical trades owe something to James Watt. It is not everyone who knows that there is in Birmingham, in complete preservation, the attic where the illustrious mechanician whiled away the last years of his life. This is a little room at James Watt's house, Heathfield House, now tenanted by one of the Tangye Brothers. In the little apartment, right at the top of the house, are Watt's tools, his copying machines, his crucibles, lead and solder, ladles, and even his paper of snuff, all just as he left them. On the shelves are wrenches, casts, nails, screws, putty as hard as a brick, chemicals long since useless, Indian ink, rules, compasses, instruments of all kinds. In one drawer there is a rule, probably the one to which young Watt referred in writing to his father, "a brass sector in a French joint, which is reckoned as nice a piece of framing work as is in the trade." A home-made "Napier's Bones" is also to be seen.

I went over Heathfield House with my friend, Mr. John Rabone, of Rabone and Son, the great rule makers, and when I was at his house, he showed me a treasured brooch of Shakespeare's which he keeps suspended on a swinging bar in a glass case. It was found in Stratford-on-Avon about sixty years ago, in the course of some excavations; and there really seems to be every possibility in favour of the belief that the piece of jewellery actually belonged to Shakespeare. It is composed of a narrow band of silver bent into the shape of a heart, about one inch in height and a little less in width; it has originally been set with twenty-two crystals, three of which are, however, missing, two of the "settings" lay filled with solder, and the third is open without a stone. The heart is not of the conventional shape—I am quoting the exact particulars from one of two pamphlets, which Mr. Rabone, an indefatigable antiquarian, has prepared on the subject—but is unequal-sided, one side being full and the other indented, after the manner of a human heart, or any bullock's or sheep's heart. Above the top of the heart is a coronet attached to the heart only at the ends, consisting of five larger stones, of graduated sizes, the first, third, and fifth stones being red, and the second and fourth, blue. On the reverse near the bottom on the one side is the letter W, and reading onward up the other, the word Shakespeare. The brooch has evidently been broken and clumsily mended. The brooch is, of course, with Shakespeare's signet ring, one of the few personal relics of the bard that survives. It would seem from various reproductions of sixteenth century brooches, that Mr. Rabone has printed in one of his pamphlets, that the shape and general character of the brooch exactly accord with the brooches of Shakespeare's time.

Several Birmingham manufacturers have, like Mr. Rabone, who is always writing, a taste for scribbling. Mr. J. W. Tonks, of Messrs. T. and J. Bragg's, is a case in point; he has written several historical accounts of the trade. I am sorry to say that this well-known gentleman is at this moment in poor health. His friends are hoping that he will shortly pull round again. He is, as most of your readers probably know, the Hon. Sec. of the lately formed Birmingham Jewellers' and Silversmiths' Association, of which Mr. Councillor Green is President.

In the course of a chat with Mr. Tonks, he showed me some of the nice things that Messrs. T. and J. Bragg, of Birmingham, have been lately making. These were special diamond brooches, delicate sprays and crescents, fanciful diamond shapes, all of a slender character, bracelets with stone centres, fichu gold brooches with one or more diamonds in the centre, and a number of diamond hair ornaments in more or less modified star shape.

Messrs. Alldays, of Warstone Lane, Birmingham, have just brought out something new in the form of a "Marie Roze combination Bracelet." It is a bracelet with a groove round it, in which lies a chain. To this can be attached a fan, a programme, or a pencil, and on touching a spring the chain falls down. It seems a really good idea. The famous lady after whom it is named is uncompromising in her praise. She declares it to be "most useful as well as ornamental," and that it "will become universally popular with ladies."

No good thing can, of course, come out of one's own country. We have been told that over and over again. In such a sad case it is a relief to notice that other nations are in as bad a plight. Yesterday I received, from a fair correspondent in San Francisco, what she calls a badge for "Harrison and Protection." She asks me to wear it. It is an ungallant thing to say, but I really dare not wear it even in my own house. It is a miserable thing. A brassy sort of button with a paper star and stripes on it. I think I am within the mark in saying that no Birmingham manufacturers, even those entirely depraved individuals who are reputed to make idols for King Bungaliboo and other dreadful African potentates would turn out such rubbish, whatever they had agreed to make the badges for.

If there were a general revival in gem ornaments, stones would necessarily go up in value, but such a state of things would depend upon a general revival of trade, which could alone increase the purchasing power of the middle classes.

Fashion seems to be a matter of revivals. Our wives and sisters are many of them wearing a style of apparel or ornament that bears the closest resemblance to that in which their grandmothers appeared. After a lapse of 20, 30, or 50 years, fashions of our ancestors are again the vogue. Just as many ladies might nowadays almost suitably appear in the fur collarettes, &c. of their mothers and grandmothers, they might wear in public, without exciting remark, a great deal of jewellery that has been handed down to them by their deceased relatives.

The truth of the trite remark that there is nothing new under the sun, and that fashions' changes are often merely revivals of preceding fashions, is indeed to be seen very clearly in the jewellery trade. Who has not seen in museums or has not had left him one of those enamelled or hand-painted snuff boxes, that our fathers and grandfathers used to carry? no such thing is now to be seen in use. Snuff-taking has gone out of fashion; but the revival of enamelling and hand-painting in the decoration of pocket articles is once more coming to the fore. Quite a fashion is now setting which asks for highly finished cigar and cigarette cases; upon these, hunting scenes, dogs, &c. are being enamelled, and it really seems as if not only were a good trade about to be done in such decorated pocket conveniences, but that enamelling itself is to receive a more or less permanent fillip. Such a result could not but be beneficial to the trade.

There also seems to be a revival in the trade in such ornaments as are ornamented with diamonds or pearls. Diamonds have been, as is well known, cheap of late. Pearls have, however, even gone up in price, not so much, no doubt, as a result of the operations of any special syndicate, but from the demand that there has been for the beautiful manufactures of the humble oyster. Some sorts of pearls have risen in price no less than 50 per cent. It would, of course, be rash to prophesy whether the spurt that the trade in diamond and pearl ornaments has made will be sustained after Christmas, but we shall know all about it in 1889.

Over many such difficulties the Birmingham Trade Association, for example, is slowly, though none the less, steadily triumphing. The meeting of the members of the local trade is certain to be useful and helpful. The barriers that have hitherto hindered, in some degree, full confidence between persons of the same trade, will be inevitably broken down, and many of the old prejudices will disappear. The Birmingham Association is beginning to take less and less the form of a conclave of individual traders each seeking his own interests alone, and is becoming more and more a strong and valuable society in which individualism is being sunk before the general cause.

The Art School that the Association has established at the Ellen Street Board School is proving a considerable success. Already 120 pupils are being taught, and, as half the fees are paid by the Association—practically the local employers—and the other half is usually met by each of the apprentices' masters, the teaching is wholly under trade management. The aim is, indeed, to turn out jewellers. It is a moot point whether such an end has been gained by some industrial Art Schools. The tendency in them is, perhaps, to direct their pupils' attention more to "mere matters of pictorial art," than to such work as is directly in the service of the trade. The Birmingham trade is satisfied that the students at their school are being taught on really sound lines.

In another paragraph I have referred to the notion that is not yet dead and buried that Birmingham's manufactures are still, more or less, "Brummagem" goods. But I had the other day a striking confirmation of my impression. It seems that even in trade circles—where what Birmingham makes and what it does not make ought surely to be fairly well known—there is still some prejudice against work emanating from Burke's, "the toyshop of the world." I know for a fact that two important pieces of jewellery, both of which have been noticed in the daily newspapers—one of the pieces with especial prominence—have had their Birmingham manufacture carefully hidden from the public and those who ordered them. The houses sent the orders to the manufacturer, expressly stipulating that no mark by which the goods' identification could be established should appear upon them. To make doubly sure it was insisted that the two articles should be hall-marked in London and not in Birmingham.

If one were to characterise the general state of the jewellery trade in the Midlands, and "in the Midlands" is not much of a qualification, it could only be said that trade is in an unsettled condition. A lot of rotten business has been done in the past. This is acknowledged on all hands. Then have come the inevitable failures, and a number of houses have gone down before the wind. Rotten business is still, however, being done, it is to be feared, and if there have already been several failures, a few or more are anticipated not without reason. The result in the end will be good. This is a selfish but certainly a philosophical way of looking at the matter. Those houses who have all along set their faces against carrying on unsound business will reap their reward.

The Board of Trade returns tell us that there is a revival in trade. When one questions the folk who are engaged in the jewellery part of the trade, it is found that the demand is by no means as good as might have been expected. Still better things are, perhaps, in store. As a well-known gentleman in the trade puts it, the general revival of the jewellery industry is coming on just as the spring comes. In the early months of the year the spring advances steadily enough, but none the less fitfully. The high spirits, aroused by a day of warm weather, are dashed by the appearance, in succession, of several cold windy days.

Some of the most intelligent and wide-awake members of the jewellery trade are now protesting, as they have been for some time past protesting, against the secretiveness that is such a prominent bump in the case of many members of the trade. Anyone who has tried to start a society or association in connection with any of the trades which the *Watchmaker, Jeweller and Silversmith* represents, has noticed how unwilling many men in them seem to be to confide in each other. In pecuniary matters there is perhaps, nothing to be desired; but in simpler, more ordinary affairs, the bump of secretiveness makes alarmingly frequent appearances. So many men seem to be under the impression that all the other folk in their trade are incessantly watching their neighbours' work, and have themselves nothing better to do than to be ever on the look out to steal other people's ideas. Every firm suffers in its time from plagiarism, piracy, or whatever it might be called, but there is reason to believe that the dread of thieves is greater than is warranted by their number and activity. It goes without saying, too, that the publicity which such a trade journal, as for instance the *Watchmaker, Jeweller, and Silversmith* is pleased to be able to offer to the three trades which it represents, is not taken advantage of anything like as freely as it might be.

The old-fashioned idea which does not favour taking advantage of press publicity dies hard, but it will die, and is dying right enough. Yet there are still many business men who do not see that publicity is a very God-send to trade. The last few years, have, however, seen many changes, and the last traces of the old Adam will soon, it may be expected, be all that are to be seen.

The Balance—its Origin—its Transformations.

THERE has been, since the first timepieces up to our days, two species of balance, derived from a common source, and from which the logical transformations give us the modern pendulum, and the actual circular balance. Balance is the generic name, and the name is fully justified by the function of the piece which is nothing but an endless balancing.

At the origin, we find the foliot, which is a horizontal balance with two arms cut with notches and furnished with two little weights called regulators, which are moved to or from the centre in order to obtain acceleration or retardation. From this foliot is derived that with fixed weights. It was invented for portable timepieces, because the moveable regulators were not practicable with this innovation. The going of the piece was regulated by limiting the vibrations by a cross piece upon which was mounted a flexible piece as a horsehair against which the foliot banked.

In observing a foliot with fixed regulators in a portable piece placed vertically, one remarks that one arm only of the foliot would suffice, by weighting it a little at its inferior extremity. From thence, very certainly, came the idea of the vertical balance, which, at the time of the application of the laws of the pendulum, gave the definitive modern balance.

Littré said: "The balance differs from the pendulum in this—that the latter is moved by the action of the weight."

Our actual circular balance for watches or portable pendules, dates from far back. It comes from the foliot with fixed regulators. In fact, study the divers forms of this foliot, and you will find them having at their extremities a hook or T.

These are the beginnings of the future disc constituting the perfect circular balance, thanks to these transformations which logic imposes. The first mechanical clocks, with weight-motor and escapement, dating from the tenth century, are reported, foliots with regulators on the notched arms. While these clocks were of large size and only used in buildings, this kind of balance only was employed. But, when in the fifteenth century, house and portable clocks of small proportions were made, the foliot is with fixed weights and the vertical balance appears. We find an undeniable example in the clock of the fifteenth century possessed by the Museum of Cluny. This piece has not suffered any alteration. It is, besides, easy to fix its date, because there are deep traces left which show that the last wheels want changing. The movement could not have been replaced, because it is the constitutive part of the clock.

It is then in the fifteenth century that the vertical balance appears. We have not any author to cite on this subject, because this point of the history of horology does not seem to have been precise up to this time, and our modern authors who treat of the balance only occupy themselves with the memorable revolution which the application to the balance of Galileo's law of the pendulum made, in horology, In fact, from this date only precision in horology commences, and setting out from this moment, it lends its precious aid to astronomy and geography.

Incontestibly the rigid vertical balance making part with the verge is employed in horology up to the seventeenth century; the examples of fixed or portable clocks, especially the latter, with balance vertical, are also numerous in the sixteenth century; documents abound; we cite, among others, a sketch of a book entitled "*France, Mœurs et Costumes,*" 1547 (Bibliothèque Nationale).

The balance is nearly always placed against and exteriorly upon the dial. It is at the same time interesting to observe that in certain clocks later to the invention of the pendulum balance, are found at the interior the balance with its suspension contrived according to the new fashion and before a little window visible by a hole in the dial under the 12 o'clock, and having the form of the arc described by the balance. We have then, there, the well-marked transition between the old tradition placing the balance in front and the new which places it at the back.

But starting from the application of the laws of the pendulum by Huyghens, the rational balance is applied. From thence is found the suspension, be it a fillet of silk or a lamina of steel, while anteriorly there is no trace of it. This fact is remarkable. For the watch, from the sixteenth century, the circular balance has ruled and comes down to us in the same form. It has only undergone the changes that fresh knowledge of metallic compensations necessitated.

This little history of the most important piece in horology, is worth being considered; we think it will be. We conclude then with giving these three dates—10th Century: Foliot with regulating weights and notched arms. 15th Century: Foliot with regulating masses and vertical balance. 17th Century: Pendulum balance.

Planchon in "*Revue Chronométrique.*"

The Wearing of Spectacles.

THE timely and judicious care of the sight is a subject, the importance of which, to all who engage in the smaller art industries, is paramount. A vast amount of popular misapprehension and prejudice exists as to the use of spectacles. Many persons who need them object to wearing them for various reasons, of which the following are a few enumerated (rightly or wrongly) by Professor Webster. Some fear that it will lead their friends to suspect that they are getting old. Others think it will cause them to be suspected of wishing to appear learned or cultured. Some persons do not want to begin to wear them, lest, having acquired the habit they may not be able to leave them off or to see well without them. Others again object to glasses only on account of their inconvenience. I have personally met with many of all these classes of persons, but I have frequently heard of another class that I have never met with, namely, those who do not need glasses, but who wear them just for effect and to attract attention. Now, the simple truth is that there are just two good reasons for wearing spectacles, and only two. One is that we may see better, the other is that our eyes may be relieved from strain. Often, both these reasons are combined in the same case. Many children begin to be near-sighted after they have attended school for a few years. They first find it out by observing that they cannot see letters or figures on the blackboard as far as the other children. They can use their eyes as much as they want to without fatigue or blurring, or smarting, or burning, or itching, or pain in the eyes, or headache. In short, they show no symptoms of eye strain. They simply do not see distant objects distinctly. Such children should be fitted with glasses at once that will enable them to see as well as others at a distance, and these glasses should be worn constantly. The child should be instructed to take them off only when necessary to wipe them or to wipe or bathe the eyes and on going to bed. The sooner the eyes get accustomed to them the less likely is the near-sightedness to increase. Moreover, the child who sees clearly only a few feet away from him loses a very important part of his education. Our eyes gather information for us when we are least thinking of it, by taking cognizance of the many objects that come within our field of vision just as our ears gather material for the proper development of our minds in listening to general conversation or to the sounds of nature and of busy life about us. It is the duty of every one to make the best possible use of the faculties the Creator has bestowed upon him. The near-sighted person who does not have his vision corrected by glasses fails in the performance of this duty. Again, the time comes in the life of every one who is not near-sighted, and who lives to a good old age, when we cannot see near objects well without glasses. Between the ages of forty and fifty, the crystalline lenses of his eyes having hardened along with the other tissues of his body, he finds it impossible to focalise as he used to. He holds his book farther and farther away from his eyes, and finally he finds that he cannot read fine print at all, or without straining the eyes. Then he must accept the unpleasant fact that he is getting old-sighted, and, if he wishes to use, and not abuse his eyes, he must get glasses to take the place of his lost accommodation and with which he can read easily. Some persons who are near-sighted in one eye and far-sighted in the other never need glasses, but always do their reading and other near work with the near-sighted eye, and their distant seeing with the far-sighted eye. Professor Webster believes this was the case with the late Rev. Henry Ward Beecher. But the vast majority of persons who wear glasses, both for the distance and the near, can see quite as well without them. They do not wear them in order to be able to see, but in order to have the strain removed from their eyes, and to be relieved from the many disagreeable symptoms, both direct and reflex, that result from eye-strain.

The act of focalisation is a muscular act and requires an effort, an output of nervous energy, just as much in proportion as any other muscular act, such as lifting a weight, or shoving a saw or jack-plane. The eye that is normally shaped forms pictures of objects, more than a few feet distant, on its back wall without any muscular effort, and has to focalise only when engaged in near work. But the over-sighted eye is compelled to do this extra work all the time except when closed. If it did not focalise, it would see indistinctly. This it refuses to do, independently of any volition on the part of its owner. The eye that *can* see distinctly *will* see distinctly, no matter how great the strain, and this by a volition apparently entirely its own. The results are headache, vertigo, nausea, nervousness, irritability, and other disagreeable reflex conditions, besides the pain and inflammation, and other symptoms manifested in the eyes themselves. Of course, the only remedy in such cases is glasses, and these glasses should be carefully selected by a competent person, and should be worn as much of the time as is necessary to relieve the eye strain. In *Taggart's Times*, February 5, 1888, is the following :

"A French philosopher has said that a man who wears gold-bowed spectacles always admires himself, and it would seem as though spectacles were becoming a sort of badge of distinction, since young and old who have the slightest excuse for using them put them on.

"When one suffers from headache, he is told that he overstrains the nerves of the eyes, and must relieve this by the use of spectacles. When things dance before the sight, the cure for that is also spectacles ; and when tired with close attention to work, the cure for wearied eyes is not rest but spectacles.

"People who live much out-of-doors are usually very keen-sighted, owing probably to the ever varying impressions made on the eyes, and this might reasonbly suggest that the proper relief for a great many eye troubles would be a change from overwork."

The person who wrote the paragraphs quoted seems not only to be prejudiced against glasses, but to know very little of the anatomy and physiology of the eye. The fact is that over-sighted and astigmatic eyes, needing glasses to relieve the constant and severe strain upon the accommodative muscular apparatus, are benefited by rest and by change of air and occupation only to a limited degree. Real rest for such eyes is possible only from the use of glasses. Moreover, it is not possible for all who suffer from fatigue of the eyes to take the time for rest. It is necessary for many to use their eyes daily and almost constantly in order to make a living for themselves and for those dependent upon them.

The Diamond.

By W. Ford.

THERE is magic in the very name. This peerless gem has held its high position in all ages ; it has caused the fall of empires and the death of many princes. It has saved many a precious life, if we judge by history. The authors of many books on diamonds and other gems gather their information from ancient and modern writers ; the practical knowledge of various scientific men, has not been sufficiently taken notice of, by following some of their theories and experiments. We shall gather some useful information in the actual formation of the diamond, and may go back millions of years from careful examination of the earth's crust. Many of our scientists arrive at the conclusion that the many upheavals of the earth's surface has brought about, at different periods, an enormous amount of pressure, which is necessary to produce the crystallisation of the pure carbon, which no artificial means can produce, as millions of tons of pressure is necessary. Nature alone is triumphant ; the researches of Professor Simmler are important : he says, that supposing the liquids occasionally found in diamonds are liquefied carbonic acid, it is suggestive that the diamond is formed by the crystallisation of a solution of carbon in such liquid as carbonic acid. It is certainly known that diamonds have exploded without ostensible cause—a fact, so far in harmony with Professor Simmler's suggestions. But it has not yet been proved that carbon is soluble in liquid carbonic acid ; one fact is certain that the diamond in its original state, was in a semi-liquid form, as many illustrations which have come under my notice prove this theory beyond all doubt. The indentations in many crystals, bear the impressions of other crystals of carbon in numberless instances, also the case of many crystals attached in conglomerate form is often met with.

The late Sir Bartle Frere in a lecture given to the workmen of our firm (Ford & Wright, of Clerkenwell), gave, as his opinion that when the blue clay was acted upon by the volcanic upheaval of the clay in liquid form from an immense depth, that great pressure came into force, which then pressed the liquid carbon in crystalline form ; and from careful examination of some rough diamonds, the layers of crystallisation are seen with the naked eye. A small rough diamond, say of one carat in weight, contains thousands of layers of cleavage, and a well-formed crystal can be cleaved into thin layers not thicker than paper, by any ordinary cleaver of diamonds. Also there are as many grades of diamonds in natural form as there are in common coal. You find sometimes, embedded in a beautiful white crystal, a speck of common boart, considerably harder than the crystal itself. It is carbon all the same, and I will endeavour to show that this common carbonate has proved of more value to man's industry than the beauty of the faultless gem to the empress, or the bride at the altar. This common black carbon is found covering a beautiful white gem, like a coat of black varnish. Rub this black crust off by friction with another diamond, and you find the white gem like a kernel of a nut. This common carbonate defies the action of the diamond polisher's wheel. One might leave a piece of carbon of this kind on an iron disc, revolving at the rate of 2,500 revolutions per minute for twelve months, without making any very perceptible impression on it. But I must now go back to the history of the diamond, from which I am wandering.

The use of rough diamonds was first known to the ancient Egyptians before all others. As we are in dispute as to the time of the origin of Egyptian civilisation, so we must guess at the time of the coming into use of the diamond as a friend to man's progress ; for the early Egyptians were the first to find out the value of the rough diamonds, as essential to their industry, which I shall show in the following remarks.

(*To be continued.*)

An American View of the Hall-Marking Question.

IN order to prevent fraud in the manufacture and sale of watch cases, it has been frequently suggested by members of the American trade that they should adopt the English system of Hall-marking. The following communication from a correspondent of the *Watch Dial*, in which the writer takes the view of no inconsiderable proportion of our own manufacturers, will be read with interest. In reference to a former article in the journal he says :—I have carefully read your article regarding the Hall-marking of gold cases. I cannot see where the benefit you seek to secure for the innocent purchaser would be obtained, as the average watch wearer knows or cares little for the stamps that may be placed upon the case he is bargaining for, but depends, nine times out of ten, on the jeweller's reputation for honesty and veracity as to whether the case he is buying is as represented. The Hall-mark is not a success in Great Britain, as we all know, and we also have had a great deal of experience with the Swiss stamp, which has not always been satisfactory. The only protection that the dealer can rely on is the innate and tried honesty of the manufacturer who has passed through the crucible of the world's test as to the quality, wear and durability of the goods he manufactures. Certain makers of watch cases, like similar manufacturers of other lines of goods pertaining to our trade, such as silver ware, electro-plated goods, &c., have only to place their names on their articles and the trade at once accepts it at its full value, knowing that such names are, when placed upon articles manufactured by them, a full guarantee that in every respect, regarding intrinsic value and workmanship, are exactly as represented. Such a reputation is more valuable to the maker and the trade than any Hall-mark, which may be avoided in a thousand ways. Right here is a way to solve the whole difficulty regarding gold watch cases that the trade can readily apply. Refuse to buy any case upon which the manufacturer, not the seller, does not place his name and stamp of quality. Reputable makers cannot afford to sell any of their goods which are not fully up to standard, and new comers will be so closely watched by their older brethren in the trade that they will not dare to debase their goods for fear of the inevitable exposure.

It is no doubt a fact that at least three-quarters of the gold cases sold as 14-carat or 18-carat solid gold cases are fully up to the standard, and the only trouble in ascertaining the quality of the remaining portion lies in the fact that no one seems to know where they come from or who made them, as so many dealers have their own name or initials placed upon their cases, and many small manufacturers adopt all sorts of devices and marks except the right one (their own name and quality mark) that it is next to impossible to find out when a black sheep is found who made it. If retailers and jobbers would refuse all cases that do not bear the name and quality mark of the maker, they would soon put an end to swindling in the gold case business. This is much better than putting all on a common level of a Hall-mark uniform stamp, as experience shows even governments are sometimes not above suspicion.

What would Steinway or Faber say if it was proposed to have a Hall-mark for pianos and lead pencils, and take away from them that individuality that has taken years to build up and is now worth millions of dollars to them? There is the same thing in our trade. Our well-known manufacturers stand by their name and trade marks now and henceforward as in the past. Their records are honourable, their goods above suspicion, and it would be suicide for them to surrender that which has been the foundation and secret of their success, *i.e.*, the unflinching integrity and honesty of their business career, and the intention always fully carried out, that any article bearing their name and trade mark shall always be exactly as represented.

Let the Jobbers' Association and the various retail associations insist on names and quality being stamped on all gold watch cases. Assay fearlessly all others, and show them up to the contempt and scorn of all honest dealers, and if this assaying business is properly systemised and carried out there will be a rapid disappearance from the market of all crooked and bogus watch cases.

Concert at Myddelton Hall.—A most enjoyable evening was spent at the above hall last month, at a concert inaugurated by the members of the Goldsmiths' Sick and Benefit Society, in aid of the widow and orphans of Robert Vincent, deceased, one of their late members. The pianoforte accompaniments were in the efficient hands of Mr. H. Lewis and Mr. Burrington. The violin solo by Mr. Percy Webster, and the pianoforte solo by Miss Skinner, were excellently rendered. Madame Burrington scored a great success with her songs "Love's Golden Dreams," and "O'er the Meadows," and as an encore to the latter gave "Love while you may." Miss A. West sang with much feeling and artistic taste "Ye Banks and Braes," and "Darby and Joan." Miss H. Ornarey and Madame Harwood gained much applause for their respective items, as did also Madame Mackey and Miss Skinner for their duet "When shall we meet." Mr. Frank Ward and Mr. G. Lyon were heard to great advantage in their respective songs, as also Mr. R. Curtis; and the comic element was well sustained by Mr. Joseph Hoffman and Mr. Noel. Signor Carlo Huberti gave a most wonderful imitation of well-known singing birds which called forth very loud applause. The elocutionary part of the programme was in the hands of Mr. T. Gooden and Mr. James Brett, the former reciting "The Uncle," and "Ostler Joe," and the latter "A Night with a Stork," in his capital rendition of which he very much tickled the risabilities of the audience, which culminated in a perfect roar of laughter and applause. The comfort of the artistes was well looked after by that indefatigable worker of the society, Mr. S. Sherrington.

Trade Unions among Swiss Watchmakers.

THE "*fédération horlogère*," or Watchmakers' Union, is an institution of some considerable standing, whose beneficial activity has greatly contributed towards the amicable settlement of difficulties between masters and men. A central committee and a permanent central secretariat combine in discussing the means by which the interests of the Swiss watch industry are to be protected and furthered. The committee's functions comprise the entire trade; and whereas its tendency is essentially reconciling, it forms at the same time a court of arbitration between manufacturers and their hands, whenever differences arise about wages, time of payment, questions referring to apprentices, hours of labour, and sanitary condition of the workrooms, &c., as far as such matters are not already dealt with by the Swiss laws. The committee's decisions are given free of charge, and are final in all cases in which a settlement out of court could not be arrived at. A delegation, composed in equal numbers of masters and men, which receives its authority, with due regard to membership, from the respective districts and unions, elects seven watch manufacturers and seven men, as well as a president, who must belong to neither class, and thus the Central Chamber of fifteen members is formed. The secretary's office is the place where both parties lodge their complaints and receive information. At present the watchmakers' union has several thousand members, but hopes are entertained that the whole trade will soon join it, as the influence the organisation has exercised so far is universally recognised. It managed to settle various strikes, to prevent the outbreak of others, and has been instrumental in establishing a better understanding between "labour givers and takers," as the Swiss describe masters and men. Under its auspices a "Syndicate of manufacturers of raw utensils for watches" has been formed, and similar combinations in other branches of the industry are contemplated. The foremost objects of the syndicates are to counteract overproduction and thus prevent prices from falling to too low a level; to regulate trade credits, and in particular to abolish the system of long credits, which was fostered by overproduction and led to severe losses. In this manner a further decline of the prices, it is thought, will, in any case, not occur, whereas an actual rise is likely to be secured.

One of the most significant elements for the benefit and development of the Swiss watch industry is undoubtedly the foundation of numerous watchmaker schools, from which a number of theoretically and practically instructed journeymen are turned out every year. The schools of Geneva and Locle have already acquired great reputation, and have certainly managed to raise the general educational standard of watchmakers. Workmen who have been apprentices are given the opportunity of increasing their knowledge of specific branches by working in the model *ateliers*, where they may earn at the same time sufficient to cover a material part of their expenses, whereas men who have passed such a course of instruction are generally entitled to higher wages, and find, moreover, employment wherever they like to go.

Applications for Letters Patent.

The following List of Patents has been compiled especially for *The Watchmaker Jeweller and Silversmith*, by Messrs. W. P. Thompson & Boult, Patent Agents of 323, High Holborn, London, W.C.; Newcastle Chambers, Angel Row, Nottingham; and 6, Lord Street, Liverpool.

15,801. P. McGregor, a communication from Messrs. Wuchner & Müller, Saxony, for "Improvements in watchmen's clocks." Dated October 20, 1888.

15,195. J. A. Wright and J. M. Porter, Leeds, for "An improvement in time indicators." Dated October 23, 1888.

15,316. F. Chandler, Leamington Spa, for "Preventing damage to watches and other timepieces, &c., occurring through breakage of mainspring or winding work, being a 'safety pinion.'" Dated October 24, 1888.

15,346. T. Gibson, Birmingham, for "Introducing needlework into jewellery. Dated October 25, 1888.

15,458. A. Demaine, Bradford, for "Improvements in or appertaining to alarum or alarm clocks." Dated October 27, 1888.

15,506. L. Q. Brin and A. Brin, London, for "A method of plating metals with aluminum and other metals such as platinum, silver, gold, &c." Dated October 29, 1888.

15,579. W. Light and J. H. Whitcomb, Birmingham, for "A new or improved coin mount for personal adornment." Dated October 30, 1888.

15,776. A. L. Lineff, London, for "Improvements in alarm clocks." Dated November 1, 1888.

16,005. A. G. Burrell, Sheffield, for "Utilising existing telephone line wires for clock synchronising or controlling purposes." Dated November 6, 1888.

15,826. G. D. McDougald, Dundee, for "Improvements in apparatus for the driving and controlling of clocks." Dated November 2, 1888.

16,033. H. Tansley, Brighton, for "An improvement in spectacle frames." Dated November 6, 1888.

16,051. J. H. Pollok, Glasgow, for "An improvement in the wet method of extracting gold from crushed ores or other finely divided auriferous material." Dated November 14, 1888.

16,504. T. Gibson, Birmingham, for "A method of combining needlework with silver-plate, electro-plate and metal work." Dated November 14, 1888.

16,519. Edward Heuer, London, for "Improvements in the construction of repeater watches and clock watches." (Complete specification.) Dated November 14, 1888.

16,513. A. J. Morcom and T. Morcom, Cornwall, for "Mechanism for preventing damage to going-barrel watches on the breaking of the mainspring, and to allow the barrel to be removed from the movement without displacing the top plate or dial. Dated November 14, 1888.

Recent American Patents.

Alarm Clock. A. M. Lane	390,786
Alarm Clock. A. M. Lane	391,802
Button. H. F. Hambruch	390,855
Button. William Bourke	391,398
Clamp Barrel for Clock Springs. C. E. Emery	391,885
Clock Synchroniser. A. G. Wiseman	391,446
Electric Regulating and Hand Setting Mechanism for Clocks. W. S. Scales	392,230
Electric Self-winding Clock. V. Himmer	391,969
Eye Glasses. F. Müller	392,552
Eye Glass Frame. A. J. Bellati	391,934
Eye Glass Holder. M. Riggs...	392,363
Eye Glasses, Holder for. S. W. Saxton	392,367
Finger Ring. J. B. Newman	392,357
Ingot for making Seamless Plated Wire. L. L. Burdon ...	397,736
Manufacture of Gold Pens. E. Wiley	390,933
Medicine Dial. M. B. Wesson	391,996
Music Box. E. Bornand	391,504
Pin. B. A. Ballon	392,302
Rewinding Clock. C. E. Emery	391,886
Self-setting Timepiece. E. Müller	392,056
Spectacles. A. Morck, jun.	392,053
Stem Winding and Setting Watch. J. H. Thornhill	392,140
Stem Winding and Setting Watch. C. Kistler	392,580
Timepiece Holder. J. H. Hodgetts	391,531
Train Time and Speed Indicator. J. A. Wilken	391,671

A printed copy of the specifications and drawing of any patent in the American list, also of any American patent issued since 1866, will be furnished from this office for 2s. 6d. In ordering, please state the number and date of the patent required, and remit to J. Truslove, Office of *The Watchmaker, Jeweller and Silversmith*, 7, St. Paul's Churchyard, E.C.

Gazette.

Partnership Dissolved.

Ruben and Isaacs, Great Grimsby, pawnbrokers. W. F. and A. Luckett, Birmingham, brass founders.

THE BANKRUPTCY ACT, 1883.

Receiving Orders.

To surrender in the Country.—Jevon, William D., Bilston, pawnbroker. Hands, William Charles, Norwich, jeweller. Barratt, William, Birmingham, jet ornament manufacturer. Rollinson, Frederick, Bramley, Yorkshire, watchmaker.

Public Examinations.

In London.—M. W. White (trading as Johnson and White), Red Lion Street, Clerkenwell, silversmith, December 11, at 11.30.

In the Country.—W. C. Hands, Norwich, jeweller, December 19, at 12. F. Rollinson, Otley, watch cleaner, December 18, at 11.

Adjudications.

In London.—M. W. White, Red Lion Street, Clerkenwell, silversmith. W. Geddes, Great Marlborough Street, Regent Street, diamond merchant.

In the Country.—W. Duffus, Birmingham, jeweller. W. Barratt, Birmingham, jet ornament manufacturer. W. Issachar, Cheltenham, late jeweller and optician. W. C. Hands, Norwich, jeweller.

Notices of Dividends.

In London.—E. Pugh (separate estate), Queen Victoria Street, and elsewhere, heraldic engraver, 7s., first and final; any day except Saturday, Chief Official Receiver, 33, Carey Street.

In the Country.—H. Hodkinson, Coventry, art metal worker, 6½d.; supplementary, Official Receiver, Coventry. J. Britton, Nottingham, watchmaker, 2s. 6d.; third instalment of composition, Official Receiver, Nottingham. R. J. Dick, Handsworth, Staffordshire, jeweller, first 9d.; 86, Colmore Row, Birmingham. J. Fletcher, Sheffield, silversmith, 7½d., first and final; Official Receiver, Sheffield.

BANKRUPTCY.

Re William Geddes, of Great Marlborough Street, Regent Street, diamond merchant.—Under a receiving order made on September 20, in the case of this debtor, a statement of affairs has now been furnished showing liabilities £5,052, and assets £448. The debtor (as reported by the Official Receiver) states that he commenced business in March, 1884, as a diamond merchant and dealer in precious stones with a capital of about £600. He attributes his failure and deficiency principally to losses on the Stock Exchange, since March, 1888, by speculations in diamond shares (£1,875), to heavy expenses incurred since September, 1887, in promoting a company for working a patent fireproof curtain (£2,560), and to losses by bad debts £488. The debtor has intimated his intention of submitting an offer to his creditors.

The Deeds of Arrangement Act, 1887.

Birmingham.

Barratt, William, dealer in Whitby jet and general fancy goods, 194, Warstone Lane. Liabilities, £373 5s. 3d.; assets, £143 4s. 8d. Deed of Composition, dated October 23, filed October 27. Secured creditors, £30. Trustee, E. M. Sharp, Birmingham, C.A.

Sayer, Stephen John, jeweller's factor, 51, Hockley Hill. Liabilities, £1,694 1s. 9d.; assets, £662 9s. 4d. Deed of Composition, dated October 30, filed November 6. Composition of 5s. in the pound, payable by three equal instalments at two, four, and six months, from the date of deed, secured. Secured creditors, £25. Trustee, E. C. Russell, Birmingham, C.A.

Dorking.

Curry, Walter Gad, watchmaker and jeweller, 61, High Street. Liabilities, £2,144 11s. 8d.; assets, £1,296 3s. 0d. Deed of Composition, dated November 13, filed November 16. Deed of assignment with committee of inspection. Secured creditors, £50. Trustee, G. G. Poppleton, Temple Row, C.A.

London.

Fowler and Powell, dealers in jewellery and fancy goods, 10 and 11, Colonial Buildings, Hatton Garden. Partners, Henry Fowler, 26, Drayton Park, Highbury, N., and Frederick William Powell, 22, Portland Road, Finsbury Park, N. Liabilities, £2,636 11s. 5d.; assets, £1,871 6s. 10d. Deed of Composition, dated November 12, filed November 17. Composition of 10s. in the pound, by four equal instalments, at three, six, nine, and twelve months from October 1, 1888, the last two instalments being secured. Secured creditors, £63 13s. 4d. Trustee, Allen Edwards, 14, Bennet's Hill, Birmingham, C.A.

Morrison, Charles Sutton, watchmaker, 6 and 8, High Street, Plaistow. Liabilities, £378; assets, £121. Deed of Composition, November 20, filed November 21. Composition of 6s. in the pound, by three equal instalments, payable at four, eight, and twelve months from date of deed, secured by the assignment. Total composition, £113 8s. 0d. Trustee, Walter W. Oxborrow, Albert Cottage, Carnarvon Road, Stratford, I.A.

Manchester.

Humphreys, Joseph, watchmaker and jeweller, Old Hall Road, Sale, and 126, Great Jackson Street, Hulme. Liabilities, £183 0s. 11½d. Deed of Composition, dated October 19, filed October 23, for the payment of 5s. in the pound, within 21 days from execution of deed. Trustee, J. E. Davies, 32a, Brown Street.

Newcastle.

Turnbull and Son, jewellers, 24, Grey Street. Partners, Elizabeth Turnbull, widow, and Margaret Turnbull, spinster, both of 22, Eldon Place, Newcastle, and Dunterley, Bellingham, and James Turnbull, jeweller, Newcastle. Liabilities, £863 0s. 3d.; assets, £320. Deed of Composition, dated October 27th, filed October 30. Trustee, T. Harper, Quayside, Newcastle, merchant.

Pembroke.

Nicholas, Thomas James, watchmaker, and boot and shoe maker, Main Street, Fishguard. Liabilities, £103 16s. 8d.; assets, £36 6s. 5d. Deed of Composition, dated November 19, filed November 23. Composition of 7s. in the pound upon execution of deed.

Penarth.

Wehrley, Carl, jeweller, 43, Windsor Road. Liabilities, £1,372 7s.; assets, £627. Secured creditors, £773. Deed of Composition, dated October 26, filed October 30. Trustee, J. Wilkinson, Birmingham, C.A.

Southport.

Jones, Richard, watchmaker and jeweller, 46, Eastbank Street, late of 21, Union Street. Liabilities, £362 11s. 1d.; assets, £110. Deed of Composition, dated October 26, filed November 2. Composition of 5s. in the pound, by two equal instalments of 2s. 6d., payable March 1, and June 29, 1889.

Truro.

Edwards, Frederick Corfield, watchmaker, 32, Boscawen Street. Liabilities, £380; assets, £275. Deed of Composition, dated October 22, filed October 25. Trustee, H. L. Saunders, Brewer's Lane, Dowgate Dock, London, traveller.

Correspondence.

All Letters for Publication to be addressed to the Editor *of* The Watchmaker, Jeweller and Silversmith, 7, *St. Paul's Churchyard, E.C.*

All communications must bear the name and address of the sender, not necessarily for publication, but as a guarantee of good faith.

To the Editor of *The Watchmaker, Jeweller and Silversmith.*

REWARDS FOR MERITORIOUS DISCOVERIES AND INVENTIONS.

Sir.—The Committee on Science and the Arts of the Franklin Institute, of the State of Pennsylvania, respectfully requests that that you will cause to be made known to the readers of your influential journal, the fact that the Committee is empowered to award, or to recommend the award of, certain medals for meritorious discoveries and inventions, which tend to the progress of the arts and manufactures.

These medals are :—

1.—THE ELLIOTT CRESSON MEDAL (Gold).

This medal was founded by the legacy of Elliott Cresson, of Philadelphia, and conveyed to Trustees of the Franklin Institute. By the Act of the Institution, May 17, 1849, the Committee on Science and the Arts was designated and empowered to award this medal, and the Committee decided to grant it, after proper investigation and report by sub-committee, either for some discovery in the arts and sciences, or for the invention or improvement of some useful machine, or for some new process, or combination of materials in manufactures, or for ingenuity, skill, or perfection in workmanship.

2.—THE JOHN SCOTT LEGACY PREMIUM AND MEDAL.

(Twenty Dollars and a Medal of Copper.)

The John Scott Legacy Premium and Medal was founded in 1816, by John Scott, a merchant of Edinburgh, Scotland, who bequeathed to the City of Philadelphia a considerable sum of money, the interest of which should be devoted to rewarding ingenious men and women who make useful inventions. The premium is not to exceed twenty dollars, and the medal is to be of copper, and inscribed "*To the most deserving.*"

The control of the Scott Legacy Premium and Medal (by Act of 1869) was transferred to the Board of Directors of City Trusts, and referred by the Board to its Committee on Minor Trusts, and that Committee resolved, that it would receive favourably the name of any person whom the Franklin Institute may from time to time report to the Committee on Minor Trusts, as worthy to receive the Scott Legacy Premium and Medal.

The Franklin Institute, by resolution in 1882, accepted the above-named action of the Committee on Minor Trusts and referred the duty of making such recommendations to the Committee on Science and the Arts. The Committee determined that the recommendation for such reward shall be made on the favourable report of a sub-committee which shall be appointed to examine the invention or discovery.

The Committee requests your co-operation in facilitating the making of the aforesaid awards for meritorious discoveries and inventions, by bringing the facts herein set forth, to the knowledge of your readers.

Upon request therefore, from interested parties, made to the Secretary of the Franklin Institute, full information will be sent respecting the manner of making application for the investigation of inventions and discoveries; furthermore, the Committee on Science and the Arts will receive and give respectful consideration to reports upon discoveries and inventions, which may be sent to it with the view of receiving one or the other of the awards herein-named, and full directions as to the manner and form in which such communications should properly be made, will be sent on application.

By the Committee's order,
WM. H. WAHL, *Secretary.*

The Franklin Institute of the State of Pennsylvania,
for the Promotion of the Mechanic Arts.
Philadelphia, *October* 1, 1888.

A MERCHANDISE MARKS ACT FOR INDIA.

Sir,—Slowly but surely the British Colonies follow the example of the mother country and adopt laws preventing fraudulent marking of goods. The Indian Government has now introduced a Bill to come into force on the 1st day of April next, and of which the following are the chief provisions :—

The Bill defines "Trade Marks" and "Trade Descriptions" in accordance with the universally accepted meaning, and states a "False Trade Description" to be one that is "untrue in a material respect as regards the goods to which it is applied," whether it has been false when applied or rendered so by subsequent alteration.

The Bill differentiates between "Trade Marks" and "Property Marks" as follows: "A mark denoting that goods have been made or manufactured by a particular person, or at a particular time or place, or that they are of a particular quality is called a Trade Mark," and includes marks that are registered out of India. "A mark used for denoting that moveable property belongs to a particular person, is called a Property Mark." Whosoever marks any "goods, or any case, package or other receptacle containing goods," or uses "receptacles so marked as to mislead as to time or place of manufacture, or as to the quality of the goods, &c.," is said to use a false Trade Mark, and shall, unless he proves that "he acted without intent to defraud, be punished with imprisonment of either description for a term which may extend to one year, or with fine, or with both." Whosoever counterfeits such marks or knowingly uses as genuine, a counterfeit mark, or has in his possession any "die, plate, or other instrument for the purpose of counterfeiting" any such marks, is made punishable with imprisonment up to three years, or with fine, or both. Whosoever sells or exposes for sale goods that are falsely marked, shall, unless he proves his good faith and discloses the source whence he obtained the goods, be liable to imprisonment for one year, or to a fine, or both. The application of a "name or initials: *(a)* not being a Trade Mark or part of a Trade Mark, and: *(b)* being identical with, or a colourable imitation of the name or initials of a person carrying on business in connection with goods of the same description and not having authorised the use of such name or initials," is deemed a false Trade Description. The definition of "application" of a mark or Trade Description to goods is most exhaustive, and seemingly sufficient to cover the entire ground.

Saving clauses are inserted for the protection of those who act inadvertently or in ignorance. Provision is made for the forfeiture of goods falsely marked, and for the intervention of the Customs Officers. This Bill makes no difference in the manner of Registering Trade Marks in India, but is meant to correspond with the British Merchandise Marks Act.

Trusting that this information may prove useful,

I am, yours faithfully,

Bernhard Dukes,
Patent Agent.

226, High Holborn, London, W.C.

Buyers' Guide.

BAROMETER MAKERS.

Barker, Francis & Son, 12, Clerkenwell Road, London, E.C. (*See Advt.*)

CLOCK MANUFACTURERS.

Evans, W. F. & Sons, Soho Clock Works, Handsworth, Birmingham. (*See Advt.*)

Seth Thomas Clock Co., 7, Cripplegate Buildings, Wood Street, London, E.C.

DIAMOND POLISHERS.

Ford & Wright, 116, Clerkenwell Road, London, E.C. (*See Advt.*)

ELECTRO-PLATE MANUFACTURERS.

Atkin Bros., Truro Works, Sheffield. (Wholesale only.)

Hands & Son, Suffolk Street, Birmingham. Peruvian Silver Spoons.

ELECTRO-PLATERS & GILDERS.

King, J. W., 13, St. John's Square, Clerkenwell, E.C. (*See Advt.*)

GOLD & SILVER REFINERS.

Day, Edward, 28, Warstone Lane, Birmingham. (*See Advt.*)

The Sheffield Smelting Company, Sheffield, *Sell* Gold and Silver (pure and unalloyed). *Buy* all materials containing Gold and Silver.

Westwood, Charles & Sons, 14, Hall Street, Birmingham. (*See Advt.*)

GOLD CHAIN MANUFACTURERS.

Goode, Jno. & Sons, Regent's Place, Birmingham. (*See Advt.*)

Reading, N. C. & Co., 186, Warstone Lane, Birmingham. (*See Advt.*)

GOLDSMITHS, MANUFACTURING.

T. & J. Bragg, Vittoria Street, Birmingham, Goldsmiths, Jewellers, Diamond Mounters, Art Silversmiths. *By Special Appointment to Her Majesty the Queen.* Royal and other Orders and Insignia, Mayoral Chains, Maces, Corporate Seals, Caskets, Keys, Swords. Masonic Jewellers.

JET ORNAMENT MANUFACTURERS.

Jones, E. A., Wholesale Manufacturer of Whitby Jet Ornaments. A Large Assortment of the Newest Patterns always in Stock. Export Orders promptly executed. Persons not having an account open will avoid delay by forwarding a reference with their order. Customers' Matchings and Repairs with despatch. 93, Hatton Garden, London, E.C.

Preston, E. & Co., 44, Spencer Street, Birmingham.

JEWELLERS, MANUFACTURING.

Booth Brothers, 43, Northampton Street, Birmingham. (*See Advt.*)

Greenberg, I. S. & Co., 44, Frederick Street, Birmingham. (*See Advt.*)

Joseph, B. H. & Co., 20, Frederick Street, Birmingham. (*See Advt.*)

Walton, G. E. & Co., 52, Hylton Street, Birmingham. (*See Advt.*)

MASONIC JEWEL MAKERS.

Vaughton & Sons, Gothic Works, Birmingham. (*See Advt.*)

MUSICAL BOX MANUFACTURERS.

Greenwood, J. & Sons, 34, Farringdon Road, London, E.C. (Importers.)

Nicole Freres, 21, Ely Place, London, E.C. (*See Advt.*)

OPTICIANS (Wholesale).

Botwright & Grey, 13, Spencer Street, Clerkenwell, E.C. (*See Advt.*)

Newbold, A. W., Jun., 58, Compton Street, Clerkenwell, E.C. (*See Advt.*)

Perken, Son & Rayment, 99, Hatton Garden, E.C. (*See Advt.*)

Raphael, J. & Co., 13, Oxford Street' London, W. (*See Advt.*)

Taylor, Jno., 49, Tenby Street North, Birmingham. (*See Advt.*)

RING MANUFACTURERS.

Appleby, Alf., 124, Vyse Street, Birmingham. (*See Advt.*)

Hope, S., 126, Vyse Street, Birmingham. (*See Advt.*)

SAFE MANUFACTURERS.

Chubb & Sons (Limited), Queen Victoria Street, London, E.C. (*See Advt.*)

SILVERSMITHS, MANUFACTURING.

Osborne, Alf., 89, Spencer Street, Birmingham. (*See Advt.*)

Round, Jno. & Son (Limited), Tudor Works, Sheffield. (*See Advt.*)

WATCH IMPORTERS.

Fattorini & Sons, Bradford, Yorkshire. (*See Advt.*)

Stockall, Jas. J., 6 & 8, Clerkenwell Road, London, E.C. (*See Advt.*)

WATCH MANUFACTURERS.

Baume & Co., 21, Hatton Garden, London, E.C. (*See Advt.*)

Guye, P. & A., 77, Farringdon Road, London, E.C. (*See Advt.*)

Golay, C. H., 46, Myddelton Square, London, E.C. (*See Advt.*)

Nicole, D. L. A. & Co., 210, Goswell Road, London, E.C. (*See Advt.*)

Newsome & Co., The Butts, Coventry. (*See Advt.*)

Stauffer, Son & Co., 13, Charterhouse Street, London, E.C. (*See Advt.*)

Tripplin, J., 5, Bartlett's Buildings, Holborn, E.C. (*See Advt.*)

Vacheron & Constantin, 60, Chandos St., Strand, W.C. (*See Advt.*)

Yeomans, S., 48, Spon Street, Coventry. (*See Advt.*)

WATCH MATERIAL DEALERS.

Haswell, R. & Sons, 49 & 50, Spencer Street Clerkenwell, E.C. (*See Advt.*)

WATCH JOBBERS.

Keat & Co., 214, Goswell Road, E.C.

S. Ockenden, Chronometer and Watch Jobber to the Trade, 155, Goswell Road, London, E.C. Staffs, Pinions, Cylinders, Conversions, &c. Price List on application.

The Watchmaker, Jeweller & Silversmith.

EDITED BY D. GLASGOW, JUN.

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The Watchmaker, Jeweller and Silversmith.

A Monthly Journal devoted to the interests of Watchmakers, Jewellers, Silversmiths and kindred traders.

Correspondence.—Correspondence is invited on all matters of interest to the trade. Correspondents will please give their full address in each communication, not necessarily for publication, but as a guarantee of good faith.

Subscription.—A copy of the Journal will be sent monthly for one year, post free, to any address in the United Kingdom or countries in the Postal Union for 5s. payable in advance.

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Address all business communications to the Publishers,

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Editorial.

JUDGING from the improvement which has taken place in all branches of trade during the past few months, the year 1889 should be a busy one for the readers of this journal. Dulness of trade had been for so long the order of the day that it seemed a hazardous thing to prophecy a good year's trade for the twelve months that have gone. Still, we did look forward to a marked improvement, and, if at the beginning of the year there was still some cause for anxiety, those of our guild (for we identify ourselves and interests with our readers and theirs) who thought with us and prepared themselves accordingly, have, towards its termination met, in in some measure, with the reward of their foresightedness, or if it likes some better to put it, their cheerful optimism. It is somewhat trite to say, what everybody knows, that all trades in *articles de luxe* are the first to suffer in periods of depression and the last to recover with a revival, yet it is undoubtedly in this fact coupled with the *steady* manner in which our business has been coming back to us lately, that is to be found the greatest promise for the future. Had the revival in the trades with which we are concerned occurred in any other manner than it has, one might be tempted (in view of numerous past experiences) to question its continuance, or at all events its increase, and to attribute it to any of the many causes by which these trades are influenced. As it is, we see no reason to doubt a greatly increased volume of business for the year into which we are now entering. With the prosperity of the staple industries of the country, and the consequent circulation of money, the fancy trades are bound (in the absence of disturbing factors) to benefit accordingly. There is another comforting reflection in contemplating the trade of the coming year, in the fact of the large number of firms doing unsound business that have been weeded out. Both manufacturers and dealers will be benefited from their experience in this respect, and past losses may thus prove future gains, while business generally will be conducted on a sounder basis ; with greater confidence and less risk.

General Notes.

Miss Levison, daughter of the well-known diamond merchant of that name, is shortly to be married to Mr. Brandon Thomas, the actor.

Over 220 French watch and clock makers have been admitted by the Committee of Admission as exhibitors at the Paris Exhibition.

Mrs. Albert H. Moore is a noted but somewhat eccentric Philadelphia society leader. She is the possessor of diamonds valued at 50,000 dols., and has a handsome collection of fine china.

David Sutton, 56 years of age, silversmith, lately residing at 34, Spencer Street, died suddenly last month. The medical evidence was to the effect that there was extensive disease of the internal organs.

The Duchess of Connaught, who is now with her husband in India, has had a valuable Christmas present sent her. It is an umbrella with a solid silver and enamelled handle set with a valuable gold watch.

The lady employées of the Keystone Watch Case Company, of Philadelphia, just before the late Presidential election, presented Mrs. Cleveland with a handsome diamond-set gold watch manufactured by their company.

Among her diamonds Mrs. MacLean, wife of the editor of the *Cincinnati Enquirer*, who mostly spends her winters in Washington, is said to have the finest of the collection that formerly belonged to Adelaide Neilson, the actress.

The Queen has been pleased, on the recommendation of the Secretary for Scotland, to appoint Mr. Ralph Copeland, Ph.Doc., F.R.A.S., to be Astronomer Royal for Scotland and Professor of Practical Astronomy in the University of Edinburgh, in the room of Professor Piazzi Smyth, resigned.

In view of the traffic that is done in watch-cases of inferior metal and alloys, twenty watchmakers of Bâle have established a tariff for the different sorts of watches, and have engaged themselves, under a penalty of 500 francs, not to sell at a lower price than the tariff imposes. They have also established a repairing tariff.

Mr. T. A. Robinson, pawnbroker and silversmith, died last month at his house of business, 26, Mortimer Street, Regent Street, W., after an illness of several weeks' duration. Although only 59, the deceased had been in failing health for several years. The business is a very old one, and was formerly carried on by Mr. Robinson's father.

Mr. Falk, says "Anglo-Australian" in the *European Mail*, who has been actively engaged for some time past in attempting to obtain a firm footing for New South Wales diamonds in the gem market, has gone back to Australia in high hopes that an Australian diamond mining company, with a capital of £75,000, will soon be before the British public.

The new book marker to which attention is called in an advertisement on another page, is the invention of the patentee, Mr. Walter Cross, of 62, High Street, Bloomsbury. It is a very simple and effective contrivance for filling an obvious want of all book readers. It is made in various metals and many artistic designs, and its prospective appreciation by all classes of the public should commend it to the attention of jewellers, to whom the qualities of utility, popularity and lowness of price, make it a desirable novelty to stock.

At the twenty-first anniversary dinner of the Goldsmiths' and Jewellers' Annuity and Asylum Institution held on the 7th ult. at the Holborn Restaurant, Major Lambert in proposing "The Health of the Chairman," said that the Goldsmiths' Company had a long list of poor to provide for, and they gave a large donation to this institution, although it had nothing to do with the company. He, however, had no doubt that if the asylum was well supported by the trade the company would add largely to their subscription.

Cautions.—Under the heading "Cautions," the *Pawnbrokers' Gazette* has issued the following:—Duffers are at work in Kent. At Chatham, a lady's chain, ostensibly gold, a peculiar pattern of twisted wire, was offered in pledge for 50s., and eventually taken in for 30s. On being filed it shows a white metal. A similar chain was sold the same day to a jeweller in Gravesend for 50s. In both cases opportunity was taken when only a junior assistant was in the shop. The pledger is described as a short stout man about 40, with close cut whiskers.

Painted diamonds are being extensively offered in pledge. It is further stated that the persons offering them purport to come from Manchester.

Paris Exhibition, 1889.—Her Majesty, by Order in Council, has been pleased to declare that the conditions of the Patent Act, 1883, under which an application for a patent is not to be invalidated by the exhibition of an invention at an International Exhibition, are to apply to the Paris Universal Exhibition, and also that exhibitors are to be relieved from the conditions of the above Act, under which they were required to give notice to the Comptroller of Patents of their intention to exhibit the article afterwards sought to be patented. The regulations also apply to designs intended to be registered.

English chronometer makers are generally agreed upon the superiority of the spring detent over the pivoted detent escapement. That the latter is, however, capable of good results is shown in the fact that out of fifteen chronometers sent recently by Messrs. Clémence Frères to the Neuchâtel Observatory for trial, fourteen have obtained bulletins of the highest class, and the fifteenth was only prevented from obtaining a similar certificate owing to the breaking of the mainspring. These watches had all a modified form of the pivoted detent escapement which is, we understand, shortly to become the subject of a patent.

Messrs. H. Sherwood & Co., of Wood Street, E.C., complain of the vexatious manner in which the Customs officials interpret the Merchandise Marks Act. They state that goods belonging to them, and properly marked with stamp, stating origin of manufacture as required by the Act, have been detained solely on the ground that the stamping has not been placed close to the trade mark. They contend that there is nothing in the Act which specifies any particular place for stamping, in proof of which, they have had many cases of goods stamped in exactly the same way as those now detained sent to them, and passed by the Customs authorities.

Prizes for Art Workmen.—We call the attention of our readers to the competition opened by the Council of the Society of Arts to art workmen in pottery, stone carving, wrought iron work, and goldsmiths' and silversmiths' work, to which we referred in our September issue. The prizes in the last class are presented by the Goldsmiths' Company, and are offered for a cup or sugar basin of beaten silver, chased or otherwise. First prize, £20; second prize, £5. A pendant brooch or locket of gold without gems. First prize, £20; second prize, £5. Nineteen prizes are offered in the class of pottery, four in the class of stone carving for the capital of a column, and three for a wrought iron grille. Full particulars as to the conditions under which these prizes are offered can be obtained on application to the secretary. All articles for competition must be sent in to the Society's house, John Street, Adelphi, not later than April 23 next.

The Earl of Mayo was defendant in an action listed for hearing in Dublin, before Mr. Justice Murphy and a special jury, in which the plaintiff, Mr. Edmond Johnson, a well-known Dublin jeweller, and more widely known as a member on several occasions of the Irish Eight at Wimbledon, sought to recover damages for alleged slander, charging that Mr. Johnson had "sweated" a silver bowl which had been left with him for repair, the fact being that the bowl had been reduced in weight by the substitution of silver solder for the lead solder which had been used when the bowl was previously repaired. Lord Mayo refused to apologise, and hence the action. A full apology being made in court, defendant agreed to pay the plaintiff's costs.

At the Middlesex Sessions last month, before Mr. Warry, Q.C., George Webb, 44, a dealer, of 76, Goldsmith's Row, Hackney Road, was indicted for stealing and receiving a chronometer, value £75, the goods of William Schoof, of 99, St. John Street Road, Clerkenwell, whose premises were broken into on June 22 last. Mr. A. B. Kelly prosecuted; Mr. Purcell defended.—The prisoner was stopped on November 5, by Police-constables 143 and 173, J division, who had reasons for suspecting him, and found to have the chronometer in his possession. The jury found the prisoner guilty.—Inspector Helson, J division, stated that the prisoner had for a long time been suspected as a receiver of stolen property. He had with him statements from other prisoners undergoing imprisonment as to the price which the prisoner gave them for stolen articles. Besides the conviction proved before the verdict, the prisoner had undergone seven years' penal servitude.—He was sentenced to eight years' penal servitude.

French Académie des Sciences—The Tremont Bequest.—In 1845 Baron Tremont bequeathed, in trust, to the French Academy a sum of money which yields an annual prize amounting to 1,100 francs, "to aid, in his works, every savant, engineer, artist or mechanician, to whom assistance will be necessary in order to attain an end useful and glorious *pour la France*." All latitude is left to the Academy as to the duration of this assistance, and as such discoveries are of rare occurrence, when the interest is not employed, it is capitalised in the funds so as to make the foundation of more value. This foundation was authorised by a decree in 1856, and the Academy proposed for the year 1857 to accord the sum at their disposal as a means of encouragement to all "savants, engineers, artists or mechanics," who, finding themselves in the conditions indicated, should have presented in the course of the year, a discovery or improvement appearing the best to respond to the intentions of the founder. Among previous laureates some well-known names apppear, and the *Revue Chronométrique* is now happy to learn that this year a Tremont prize has been awarded to an able and distinguished confrère, M. A. Fénon, horologer, of the Paris Observatory.

The Diamond Market.—The comparatively small demand is reported as continuing in the *Amsterdam* market, being kept up by foreign buyers, who are tempted by the low prices now ruling. *Rough* and cleaved goods are in most request, and *roses* meet with some attention.

Some large shipments have been made from *Paris* during the month, both for European and American markets, but the market is reported as overstocked so that but small prices are realised. The only buying on speculation has been done in fine worked stuff.

The usual "Castle" steamers brought a moderate supply of current stuff to the *London* market, and owing to the lower quotations large stocks changed hands. The higher qualities were in greatest demand, which is usually the case at this time of year, and numerous foreign buyers made trade brisk.

Latest from *Kimberley* report a fair demand for all classes of stones with the exception of *Bultfontein* stuff, which is at present neglected.

Metals :—*Silver*—Business dull at 42d. per oz. for bars, and 41¾d. per oz. for Mexican dollars. *Copper*—There is a fair demand for Chili bars at £77 10s. cash to £78 at three months prompt. *Ore* and *Regulus*—14s. to 15s.

Trade Notes.

Messrs. Hufton & Lewis, manufacturing jewellers, have removed their offices from St. James's Walk, Clerkenwell, to more commodious premises at 35, Hatton Garden.

Some time ago we noticed the increasing demand in South America for English quarter clocks. This trade is now in such a flourishing condition that orders are absolutely overflowing with London clockmakers. It is estimated that there cannot be less than 500 of these clocks now in order in Clerkenwell alone.

In the Nantwich County Court on the 5th ult., P. J. E. Plimmer was mulcted in the sum of £25 for breach of agreement with Charles Ankers, watchmaker and jeweller, with respect to carrying on business in the parish of Audlem, and an injunction was entered to restrain the defendant from continuing business in that locality.

Messrs. John Smith & Sons, the well-known turret clock makers, of Derby, have just erected a clock in Elstow church, near Bedford. This clock is so constructed that any separate part can be removed without disturbing the remainder. It is fitted with all the latest improvements, and is destined to form a standard clock for the locality.

The *Watchmakers' Almanack* published by Messrs. P. & A. Guye, and being their Annual Almanac and Price List, has once more made its appearance, and will doubtless be greatly appreciated by all who are its recipients. The present publication is well and tastefully got up typographically and contains a variety of useful and entertaining information.

Messrs. Vale & Sons, of Hockley, Birmingham, have just brought out a useful novelty in the shape of an "Automatic Pickle Fork." This contrivance has a moveable piece which slides down the prongs and pushes off the pickle by the pressure of the finger on the top of the handle. The bar which slides down the prongs returns to its original position on withdrawing the pressure of the finger.

Messrs. Stauffer, Son, & Co., have just issued a new material list of their machine-made "Atlas" lever watches. The list includes all the pieces of these watches, so that in the event of loss or injury any part can be forwarded by post by referring to number of the piece in the catalogue. It is novel in style (being printed on paper pasted on linen and folded several times), artistically got up, and copiously illustrated.

A useful diary for the year is issued by Messrs. T. Fletcher & Co., of Warrington and 77, Queen Victoria Street, E.C. It is intended to hang against a wall, a leaf for each day of the year to be torn off. Each leaf has an illustration of one of the the specialities manufactured by the firm, being stoves, burners of all descriptions, soldering bolt heaters, melting arrangements, etc., etc. Jewellers should write for this catalogue.

Alderman Sir Polydore de Keyser has, "in recognition of their pleasant and valuable services" during his mayoralty, made various handsome gifts to his official staff: To Mr. Soulsby, his Private Secretary, he presented a silver centre dessert-stand; to Mr. Winzar, Swordbearer, a silver tea service; to Major Baggallay, Macebearer, a silver paper-knife; to Major Burnaby, City Marshal, silver fish-carvers; and to Mr. Cecil E. Douglas, Chief Clerk, a silver cigar-case, all engraved with appropriate inscriptions. These goods are the manufacture of the Goldsmiths' Alliance Company, Limited, of Cornhill, E.C., whose well established reputation they fully maintain.

Messrs. J. S. Matheson & Co., of 47 and 48, Shore Leith, have had great success with their patent keyless ship's chronometers. That something in this direction was a desideratum has long been acknowledged, and various have been the schemes from time to time made with more or less success for effecting it. Messrs. Matheson's mechanism being simple and far from cumbrous seems now to have effectually solved the difficulty, and judging from the testimonials they have received from many eminent persons who have practically tested it and are qualified to give an opinion on the subject, the invention appears destined to give a healthy stimulus to their business and the chronometer trade generally.

Messrs. G. E. Walton & Co., 52, Hylton Street, Birmingham, have sent us some specimens of their new patent "Ixion" solitaire, and having practically tested them, we can safely say this is one of the best inventions of the kind we have yet come across. The main part of the back and the post are in one piece, and the stud can be secured in the cuff by turning the front button after the former are inserted. The illustrations render a long description unnecessary. These goods are well finished, and are made in a variety of choice and novel designs. Among other novelties introduced by this firm for the benefit of the present and future generations of retailers, may be mentioned their wire springs and other forms of clips for attaching studs, &c., to cards. These clips allow of the goods being readily removed for inspection, and replaced without danger of loss, or soiling. They are patented in the joint names, of W. Pearce and F. A. Walton.

An invention which may have a greater effect on the watch trade of the future than appears at first sight, has just been brought out by Mr. Samuel Walker, of South Road, Waterloo. This is an eight-day ¾-plate, going-barrel watch, made in all the ordinary sizes of Wycherley movements. The obvious advantages of a watch that only requires winding once a week should ensure the popularity of this innovation. Mr. Walker says his object has been to produce a really first-class and practical article for the trade, knowing that if it is accepted by the trade its success with the public will be an accomplished fact. We have not space in the present number to give full particulars of its construction, but have no doubt Mr. Walker would be pleased to do so on application being made to him. As soon as we can obtain drawings, etc., we shall be pleased to say more about it. Meanwhile watchmakers on the look out for extension of business should communicate with the inventor, as above.

Key for H.R.H. the Prince of Wales.—A handsome silver-gilt key was presented to H.R.H. the Prince of Wales, on the occasion of his opening the Jubilee Hall, Ealing. The commission was given to Mr. C. O. Walter, of Ealing, who entrusted the design and manufacture to Messrs. T. & J. Bragg, of Birmingham. The style of the key is renaissance. The motive of the head is circular, with open scroll work around the border. The obverse is occupied by an escutcheon bearing the words, "Victoria, 1837–1887," on an enamelled band. On the reverse is the following inscription:—"Ealing—presented to His Royal Highness the Prince of Wales, on his opening the Hall, December 15th, 1888." On either side of the inscription is the rose, thistle and shamrock, as national emblems, and above it are the Prince of Wales' feathers. The capital of Key column is decorated with the rose of England, while suitable decorations are shown on the column. The whole is finished in the best style, and will form an interesting souvenir of the occasion.

An American exchange says that "many firms in New York have safes made of pasteboard, for the purpose of giving a business like and thrifty appearance to an office. They are said to be excellent imitations of a 250 dols. safe, and there is another great advantage. When a burglar blows up a sham safe the loss is not so heavy. It is awfully provoking to have a 250 dols. safe ruined by burglars."

Birmingham News.

From Our Correspondent.

The year 1888 has passed away, leaving many an ambition unfulfilled, and I am afraid in some cases leaving the total in the Day Book very much below the expectations formed in the opening of the year—for was not this 1888 the "Lucky Number" that was to be all prizes and no blanks; was it not going to set us all on our feet again, and set anvils ringing, and steam machinery snorting, and revive all the busy scenes and active live consequent upon good trade and heavy purses? Well, if it has not done all this, if it has not maintained its superstitious character for good luck, and filled our purses with gold and our streets with laughing faces, it has at least proved better than its predecessor, 1887. "The great Jubilee year," which all the commercial world will remember as one of the worst financial years for a long time, has certainly filled some books with orders; the Birmingham Carriage Builders (Railway Carriages I mean) are all so busy that they are obliged to refuse orders; one firm, who employ 800 pairs of hands, assure me that the orders of 1888 are so large that they can't possibly execute them under two years with their present staff of work-people: this is good business, or ought to be. The jewellers, who are the last to feel a revival, have fared pretty well, and any observer passing through the district after 7 p.m. during November and December, could not fail to notice many workshops still fully lit up, clearly showing that "overtime" was pretty general, and in fact, many of them have been running from twelve to fourteen hours per diem, and most of them with their full number of hands. The class of trade that has kept up best is that of the gold worker and diamond mounter: such goods as gold and gem shirt studs, cuff studs and links having been in fair demand: those firms who have produced the greatest novelty have been really flushed with orders. I think, then, that we can, with all fairness, say a good word for the year that has passed, and express our hopes that the one just commenced will follow the good example and improve upon it as much as possible.

* * *

The electric lighting venture in Corporation Street, Birmingham, which I referred to in my last, has proved to be a taking speculation, and most, if not all, of the shops are taken, and many of them are open with attractions for Christmas. I am glad to see that the public appreciate the "forward" spirit that has always been displayed by the "little hardware village of Birmingham," and hope to see the example imitated in other parts of the town.

* * *

The jeweller's retail shop in Bull Street, at one time occupied by Messrs. Nathan, has just been fitted up with a new front, and now bears quite an impressive appearance. I hope the outlay will bring a corresponding amount of good business to the enterprising proprietors. Bull Street has been somewhat handicapped of late by its more showy and ambitious neighbour Corporation Street, but a little more spirit like the above will enable it to hold its own.

* * *

There has always been a portion of the Birmingham Market Hall that has made a certain amount of show in a cheap class of jewellery (the kind known as Brummagem), and at one time it seemed to have somehow got edged out; but in passing through lately I noticed that it had been rather powerfully revived; there was more of it, and I think the quality was better—at any rate, the outside show was a little more artistic than heretofore, so I suppose the taste of that class of people who delight in eating "hot dinners" among steaming stew pans and in full view of the public (some of whom are highly amused thereat) in our Market Hall, are rising to the occasion and demand something a little less like brass door knobs and glass beads for their personal adornment; if this is the case, the "powers be praised" say I.

Of the changes that are always going on in a large district like the jewellers, and the interest that is necessarily attached to the same by people who are or have been located there, I always feel that those, where well-known pioneers of the early trade have departed from among us, must be of the greatest interest. I stated some time since that Mr. Kent, of Upper Hockley Street was retiring from business; he has now left the premises (residence as well) and gone to live outside the town in Nursery Terrace, a suburban road. He informs me that he has not been a tenant under anyone for 40 years, and has only been used to rent day as a time to receive money.

* * *

Mr. Joseph Bailey, late of the firm of Osborn and Bailey, Northampton Street, has taken into partnership Mr. Hutchinson, late of Hutchinson & Smith, Warstone Lane, and started business in Vyse Buildings, Vyse Street, the principal line of work being diamond mounting. The firm will trade as Bailey & Hutchinson, and are well laid out for doing a large business as they have room for a good number of hands, and are both practical as well as business men. They have engaged as their traveller Mr. Arthur Bennet, late with Mr. W. Osborn, Northampton Street, and as Mr. Bennet is well known to the trade he will, no doubt, be able to supply the firm with indents at once.

* * *

Messrs. Sichell & Co., watch factors, have removed from 18, Vyse Street, to 45, Warstone Lane, Birmingham.

Sheffield Notes.

From Our Correspondent.

The subject of hostile tariffs has long been interesting to Sheffielders. So nearly does it affect the welfare of every man, woman, and child amongst us that we have given it an inordinate amount of our attention, and we thought therefore that we knew all about it. But the idea of a hostile tariff imposed only on the goods of a particular firm has not hitherto been dreamed of in our philosophy. Nevertheless it has transpired within the last few days that such a tariff has long been in existence. The country in which the brilliant idea originated is the Argentine Republic, and the firm operated upon is that of Messrs. Joseph Rodgers and Sons, of this town. It seems that for some years the Argentine Tariff Commission has caused to be levied specially high duties upon the manufactures of this firm as compared with those of other manufacturers. The reason alleged for this over-valuation, viz., the superior quality of their productions, is certainly sufficiently flattering to Messrs. Joseph Rodgers and Sons, and must have served to sugar the pills they have for so many years been swallowing. Nevertheless they made an effort two years ago to get the invidious distinction done away with. The effort at that time was not crowned with success. More recently, however, certain customers of the firm in the Republic have represented to them that these high and ever-increasing duties (in some cases five times those imposed upon any other cutlery manufacturer, British or foreign, and without any regard to the value of the article), was likely to jeopardise the trade which they had been building up for so many years. Messrs. Rodgers and Sons accordingly once more approached the Foreign Office, and this time the negotiations set on foot by the Marquis of Salisbury have been successful, and the cutlery of the firm will now be taxed on the same basis as that of any other firm. The action of the Foreign Office in permitting diplomatic officers to engage in adjusting matters of a purely commercial character is recognised as a new departure, and has given great satisfaction here.

The question of the Plate Duties is again being pushed to the front by an enthusiastic London gentleman, who keeps writing to the Sheffield papers on the subject. Manufacturers here, however, do not appear to evince much interest in the matter. I had a conversation on the subject the other day with the head of one of the largest silver and electro-plate firms in the town. This gentleman, although rather heterodox in his views as to fiscal policy, is yet a shrewd and successful man of business; has been Master Cutler, and is altogether a man of affairs. His opinion is, that the abolition of the duty on silver plate will make no appreciable difference in the quantity of work turned out—if a little more silver is made up, a little less German silver will be made up, and so things will be equalised. He, moreover, affirms that the tax on silver plate has nothing whatever to do with our being shut out of the American market—it is the hostile tariff, and nothing else. This he says is proved by the fact that we are equally unable to introduce German silver goods into the American market. On the other hand, the smelters are all in favour of the change. The tax they say, is equal to 25 per cent. on the value of the raw material, and its abolition therefore must make a considerable difference in the demand for silver goods. This, however, does not affect the assertion that the total amount of silver and electro-plate ware turned out would not be affected by the change.

Then comes the vexed question of Hall-marking. I have been at some little trouble to ascertain the views of manufacturers on this point. The all-but universal opinion is that its abolition will not do. How is the purchaser, it is argued, to know that he is getting the genuine article? If a watch chain of 9-carat is called gold, to what degree of impurity must a silver article descend before it ceases to be silver? The abolition of Hall-marking would leave that point to be decided by the manufacturer or shop-keeper. Nor does the proposal to make Hall-marking voluntary meet with any more approval. The verdict is decidedly in favour of compulsory marking, with a small fee to defray the expense.

The petty annoyances incidental to many of the dealings with the Assay Office seem for the time almost forgotten. One manufacturer with whom I conversed on the subject, went so far as to express a hope that we might ultimately have German silver hall-marked as well. At present we have every gradation of the metal, from almost pure nickel on the one hand to almost pure brass on the other. Those gradations are supposed to be indicated by the letters of the alphabet—"A" quality, "B" quality, and so on. But the "B" quality of one firm does not correspond with the "B" quality of another, and it is hard to believe that the purchaser is not sometimes deceived, when he orders spoons of "B" quality and expects to get the same kind of metal as if he had ordered the same quality of goods from such a firm as, say James Dixon and Sons. Compelling every manufacturer to strike a letter on his work that really would indicate its quality, would certainly do away with a great deal of ruinous competition.

It is, perhaps, unfortunate that the Sheffield press, in from time to time narrating the proceedings which form the sequel to the death of poor Fred Barker, copy entirely from Transatlantic prints. There is something in the style of these organs which jars against the feelings of the numerous friends of Mr. Barker. Mr. Barker was not a public man, he was simply a very successful commercial traveller; but his social qualities, combined with his past reputation as an athlete, made him known to, and liked by, a very large number of people in Sheffield. The circumstances connected with his sad end were sufficiently dramatic, and naturally suggest the hackneyed phrase, "Truth is stranger than fiction." The sum and substance of the whole miserable story seems to be, that he contracted a marriage, after a barbarous Yankee fashion, with a woman whose real character he afterwards realised, and that the shame of the discovery being too much for him, he shot himself.

An important extension of the powers of the Cutlers' Company will be effected by the new Act of Parliament relating to Patents and Trade Marks. Hitherto this ancient corporation has only been able to grant and register marks to be used on articles made of steel; now, however, its jurisdiction will be extended over goods made of any metal, thus bringing the silver and electro-plate trades within the sphere of its influence. Of course the new act will be largely taken advantage of by manufacturers in the trades in question, most of whom are already members of the Cutlers' Company and many of whom are Ex-Master Cutlers.

The improvement in the electro-plate trade noticed last month is fully maintained, and not only are all the works on full time but the ancient institution of "bull week" is being honoured with as much vigour as the modern Factory Act will permit. Although the most learned men in Sheffield have only been able to hazard vague guesses as to the etymology of the name, yet every silversmith, cutler and grinder knows full well what "bull week" is. "Bull week" is the week preceding Christmas Day, and its essential feature in the good old times before the late depression was, that in it men and boys worked almost continuously night and day till the morning of Christmas Eve. Although condemned on the ground of injury to health by the classes who could not participate in it, yet the practice was found by the artisans themselves so exciting that even the most spiritless were completely carried away by the influence of the season. Moreover, piece work being almost universal in Sheffield, the tangible results were so satisfactory at the end of the week when the prolonged Christmas holidays commenced, that the practice has long maintained a singular vitality. The experience of this year seems to show that any falling off in keeping up the old custom of late years has been owing to that long continued depression in trade which we all hope has now passed away.

I am afraid, however, that the briskness in the electro-plate trade in Sheffield scarcely warrants the conclusion that the general trade of the country has improved to an equal extent. That it is improving the Board of Trade Returns leave no room to doubt, but the continued low price of coal in spite of the 10 per cent. increase in wages extorted from the masters by the miners' unions seems to show that trade in general is by no means as good as might be desired. The undoubted and considerable improvement in the electro-plate trade will be found on enquiry to be largely owing to extensive orders from the colonies. Most of the Sheffield firms seem to have been well represented at the Melbourne Exhibition, and it is a noteworthy fact that goods orders from Australia have been placed with nearly all of them. Manufacturers are quite alive to the necessity of creating a market for their goods beyond the seas to compensate for the loss of the American trade, and if they succeed in doing so the stagnation in the home trade will not have proved an unmixed evil.

Midland Jottings.

By J. W. Robertson-Scott.

MOVING about among the watchmakers and jewellers during the week before Christmas, everyone seemed to be in a more or less complacent frame of mind. Not a single note of dissatisfaction was to be heard.

One watchmaker—he was a young man, which perhaps accounted for his cheerful optimism—went so far as to observe, unsolicited, that the trade had never been so good for years. He found the cause of such a satisfactory state of things in the fashion in which the colonial trade has picked up after having been quiet for so long, and in the marked improvement that has latterly taken place in general trade, upon which every special industry, be it shipping or watchmaking, necessarily depends.

There is no doubt that latterly the watchmaking trade has been in a much improved condition. It cannot be gainsaid that throughout the country orders have been freely given and that work is plentiful.

I heard of one house in particular, the English Watch Company, which is having an especially good time just now. All branches full, advertising for hands—what could be better?

Will such a pleasant condition of affairs last? That is the question. It is difficult to answer. One informant, somewhat overlooking perhaps that wise hint of Sir Wilfrid Lawson's, "Never prophecy unless you know," does not hesitate to prognosticate that there will be a strike in the watch trade between now and six months hence.

Why? Because, he says, while the trade has improved, men's wages have not. For some time past the hands of the big houses have been petitioning for a "rise," and they will not rest satisfied until they get what they ask for.

This advance demanded will probably be 15 or 20 per cent. on present prices. Watch finishers, whose wages only average 25s. for 56 or 58 hours' work, think that with a better state of trade they may reasonably expect to be given the opportunity of earning 30s. or 35s.

One well-known house has, I am told, partly in response to this demand and partly as the result of other circumstances, made two advances of five per cent. in their men's wages.

Mentioning, however, this notion of a coming strike to a leading man in the watch trade, he attached little importance to it. His opinion was that the improved state of the industry is simply a natural sequence to the better general trade that has been enjoyed for a short time back combined with the favourable season of the year. Trade is usually thought to be better in winter than in summer, and the approach of Christmas doubtless also counts for something.

He expressed the belief that there would be no strike. Rather would trade be quieter after January, and things would fall back more or less to their normal condition.

Messrs. C. Haseler & Sons seem to be getting on well in their new place. Of the making of type-writers there is no end, and they have just bought up the English rights of Royle's machine (registered number, No. 11,122), which seems to have many advantages, and is to be sold at a moderate price.

An instance of the improvement in trade is to be seen in orders that they have, for a hundred gross of screws.

In the course of a chat I had with Mr. Louis Platnauer, who is the Consul in Birmingham for Portugal, he emphasised the fact that keyless watches are making considerable progress in popularity, to the detriment of key winders. I should imagine that such a relative popularity would somewhat astonish a great proportion of the general public.

Of course with the keyless watches the bow fastener or chain ring difficulty comes in. It is not easy to devise right away, a plan by which the watch ring, to which the chain catch is to be affixed, can be so fastened to the neck of the watch, as not to interfere with the winding screw inside. Up to the present time the trouble is only partially met, by the ring being sprung upon the neck of the keyless watch. While however, the boring of the neck in which the screw runs is thus obviated, a strong wrench—that of a watch-snatcher, for instance, or an accident—would pull the ring clean out from the watch.

Mr. Louis Platnauer is bringing out the latest device to cope with the difficulty indicated. He has just patented his notion in France, Switzerland, America, and this country, and is sanguine of its success. That there is the proverbial long felt want for the kind of thing referred to, is amply proven. The characteristics of the Platnauer patent are its cheapness, its simplicity, and what seems to be, as far as one can judge from a large model, its general efficiency.

I was somewhat surprised to see on Mr. Platnauer's wrist one of those wristlet watches. On indicating as much, its wearer waxed quite eloquent on their manifold advantages to gentlemen in wintry weather. In summer men may wear their watches in their pockets if they choose, but surely in winter time it is a convenience to be able to tell the hour of day or night by lifting one's hand, instead of having to unbutton and re-button a couple of coats in the face of rain or snow. The Consul for Portugal, in the city of Birmingham, has this idea anyhow, and doubtless many other men-folk will soon be thinking with him.

It is quite evident that among ladies these watch wristlets, whether in the form of leather, silver, or gold bracelets, are having a good sale just now. As an ornament, ladies can, of course, wear them upon all occasions at any time of the year, but for shopping expeditions they are of particular service.

For both ladies and gentlemen the wristlets have another no small merit. Pickpockets would find watch-snatching almost an impossibility, were the practice of pocket-carrying of timepieces generally superseded by the use of the wristlet watch-holders.

I understand that military officers find these wristlet watches a great convenience upon the parade ground.

Of course if a fashion for wristlet watch-wearing sets in, the watch chain makers will be crying out.

Already the wristlet watches have been largely gone in for on the Continent, where they are now seen quite frequently. It is, too, some time since the wristlets made their appearance at Brighton and such places.

A lady friend of mine with plenty of the kind of pluck of which many men must confess themselves deficient, lately came upon an old watch-chain for which she had no use. Resolved to get rid of it she called upon no less than *seven* jewellers next time she went to town! I asked her what they said to her, and this was her report.

No. 1 did not buy; No. 2 did not buy unless goods were taken in exchange; No 3 offered a guinea; No. 4 said he would give 19s.; No. 5 said he could not pay more than 25s.; No. 6 quoted a guinea; No. 7 suggested 33s., and with him she closed, feeling that perseverance—he being the last interviewed—had been duly rewarded. But she does not seem to understand how it was that quotations ranged all the way from 19s. to 33s., and I did not enlighten her, perhaps because I did not feel able.

There is a big firm of "universal providers" that has a "colossal" establishment in Birmingham, which has done some enterprising things in its time, among others commissioned the "Great Eastern" as an exhibition ship, published the cheapest penny book in the country, and sold postcards at 4½d. the dozen. Its latest move is to give away watches to all buyers of Christmas suits.

Here are the announcements :—

To Gentlemen.—Lewis's will give one of their Wonderful Centre-second Chronograph Stop Watches to every purchaser of one of their wonderful men's ready-made tweed suits or ready-made overcoats at 30s. and upwards.

To Youths.—Lewis's will give a splendid Watch to every youth who purchases one of their world-renowned ready-made suits or ready-made overcoats for youths (12 to 19 years of age) at 19s. 6d. and upwards.

To Boys.—Lewis's will give to every boy who buys one of their wonderful boys' ready-made suits or ready-made overcoats at 15s. 6d., suitable for boys from 3 to twelve years of age, a splendid Watch.

As these watches are guaranteed for twelve months, it would be interesting to know where they come from. Truly, with watches as tradesmen's "bounties," "Waterbury" watches at half-a-guinea and fifteen shillings, and good, serviceable watches in the regular watch-sellers' windows, ticketed at 30s., profits are cut down somewhere.

Some comment has been made in Birmingham over the case of Mr. John Nelson, of Plymouth, a "public apology" from whom to the Guardians of the Standard of Wrought Plate for the city, has been advertised in the local papers. He admits in the advertisement having "sold and exposed for sale 9-carat gold wedding rings without the same having been assayed and marked and the duty paid thereon, such sale and exposure for sale being contrary to the statutes in force with reference to the assay of gold wares. Now I beg to say that such sale and exposure to sale were made by me in ignorance of the law on the subject, and not with the intention of breaking such law; I therefore humbly apologise to you for the offences so committed. If you will waive proceedings against me I agree to pay you a penalty of £50, and to pay the costs, charges, and expenses you have incurred with reference to this matter, and to forfeit to you the whole of the wedding rings which had not been assayed and marked, and which were seized by you under a warrant granted by the Justices of Plymouth on the 19th October last. I also undertake that I will not hereafter sell or expose for sale any wedding rings until the same have been assayed and marked, and the duty paid thereon as required by law."

Fifty pounds and costs, is of course, a thumping sum to have to pay, and looked at from this point of view some excuse for selling unmarked 9-carat rings is sought for in some quarters. There, it is said that many people have considered that 9-carat rings were not liable to pay duty. Mr. Nelson probably offended without guilty knowledge. It was possible to construe the law that 9-carat rings escaped the duty, and, in such circumstances, the case in point may perhaps be reckoned one of some hardship. No doubt, too, many people, unaware of the strictness of the law, have these 9-carat rings in stock in some quantities.

I represented this view of the case to one of the leading Birmingham ring makers, and he by no means agreed with it. However, he declared, what seemed reasonable enough, that if people in the trade did not know that 9-carat rings needed stamping, they ought to know it; for it is one of the most elementary things that could be learned.

At the recent Art Congress at Liverpool, it would be noticed Mr. Whitworth Wallis, the custodian of the Birmingham Museum and Art Gallery, opened a year or two since, by the Prince of Wales, gave utterance to a manful word as to the high character of the education "that is being given in the art schools of the new Midland 'city' to even the humblest attenders."

It is pleasant for the folk of much-maligned "Brummagem" to hear of such protests as this against the popular impressions as to the place's wares. Indeed, were the saddle always put on the right horse, even Birmingham, like a certain individual not much thought of in these days, Mephistopheles, says, might be found to be scarcely as black as painted. Whenever, for instance, anything outrageous in the trade is discovered, it is promptly credited to Birmingham. Such has been the case in relation to the recent fashion that has set in for small, delicate silver ornaments. It was, of course, Birmingham which was thus pushing out of popularity gold ornaments.

Now, the truth is that the innovation saddled on Birmingham must in fairness be attributed to Paris. From information received from the French capital it is clearly shown that, in this particular instance at least, Birmingham is guiltless.

By the way, it is the gospel of fashion's notaries, that all fashions come from Paris, and that in fashions, Paris rules the world. Will the generalisation pass muster? I am afraid, if all I hear be true, that it will not. Of course in these days, when the authenticity of the great wall of China, and of Shakespeare—by Shakespeare—are alike assailed, it behoves us to express ourselves as absolutely certain of very little. We must in this fashions from Paris matter, be chary of coming to too rash a conclusion. What will be thought of the suggestion that Birmingham leads the way, and—in the language of the advertising draper—others, in this case Paris, follow.

STILL there is some foundation in fact for the notion. It has lately been indubitably proved in Birmingham, that certain "new fashions" fresh from Paris, really originated in the Midland metropolis, whence they quietly found their way to "the capital of the world," and were from Paris sent forth as the very latest productions of lively Gallic fancy.

I WAS chatting with Mr. J. W. Tonks (T. & J. Bragg), who I am glad to say is quite well again, and I noticed quite a pile of designs for caskets and presentation plate in general. The quantity of this "braw" work for which Messrs. T. & J. Bragg must be held responsible is wonderful to think of. The pile of coloured designs I noticed were little more than the accumulation of twelve months or so. The Jubilee year was, indeed, a perfect mine of advantage to makers of caskets, &c., the old Birmingham firm in particular. It occurs to me that if Braggs were allowed to put their names to all their work, their resplendent and valuable productions would fill a fairly commodious museum.

I WONDER in what manner the Queen and the Prince of Wales keep their hundreds of caskets of one sort and another. It is said that they have each private museums in which these offerings of ardent loyality are laid up. I should imagine that it would take a good deal of cataloguing and of ticketing for the Queen, especially, to remember where, from whom and upon what occasions the various gold boxes and gold ornaments came into her possession. Fancy what the accumulations of 50 years must be like! And His Royal Highness must have, in his turn, a fairly large store too.

IN January, the annual meeting of the Birmingham Trade Association will be held, when several somewhat important matters will engage attention.

ONE subject that will be discussed is of a very practical character. This is the question of petty pilfering among workpeople. There is reason to believe that the Birmingham trade loses not a little in driblets by various systems of petty pilfering that appear to somewhat generally obtain. "Receivers" there are in plenty, as might be expected. A committee has been specially appointed to consider the whole matter, and their report will be anticipated with interest.

As far as the local jewellery trade is concerned, it cannot be doubted that better business, if of a more or less fitful character, has been done. There has really been an advance in the sale of best goods—diamond brooches, bracelets, &c., and it is anticipated that a good month will be made up. It is strange, however, that, although in general trade money has lately been made, the makers and sellers of jewellery do not seem to have experienced any commensurate activity from this excellent state of things.

IN Glasgow, for example—where the creditable and well-patronised Exhibition has caused money to circulate freely, and has, it is reported, "made the fortunes," more or less, of not a few tradesmen, hotel proprietors and lodgings-letters—the city jewellers have found little of the newly-won cash brought to their counters. Still, perhaps the Glasgow people will be more free in their spending in the last week of the old year.

THERE is no doubt about it, that cheap, fancy silver ornaments are steadily gaining ground in public estimation. Of course, these articles are of a delicate, tasteful sort; heavy silver jewellery being almost as much of a drug in the market as heavy gold jewellery. This light, artistic, silver work, made by jewellers, first entered the market in the form of pretty, delicate brooches. Now, however, one sees in the shop windows goldsmith-made silver salt-cellars, serviette rings, and even cream jugs, brush-backs in the Queen Anne style, and pincushions. These natty, fanciful things are undeniably well-made, and people are to be met who suggest—but are they not jewellers and goldsmiths?—that the delicate touch gained by experience of minute work in the most precious metal, give the craftsmen, who are now turning out odds and ends foreign to their proper calling, some considerable advantage over silversmiths. Perhaps one must regard it as only one of the signs of the times that, among other strange and striking occurrences brought to light of late, goldsmiths are nowadays discovered to be turning their attention to silversmiths' work.

HOWEVER the matter stands, it is evident that this new field for profit opened to the jewellers and goldsmiths will help their returns in no small degree—for some time at least. Of course, it must not be overlooked that the silversmiths, when they notice their business preserves being poached upon in this manner, will set to work to recover themselves, and having the advantage of plant, &c., already conveniently to hand, will not fail to do their best to give a good account of themselves. It is too early before the *Watchmaker, Jeweller and Silversmith* goes to press to discover what kind of a Christmas trade has been done. Upon the amount and character of the business transacted by the retailers, there necessarily depend their ability and willingness to buy when the holidays are over.

Board of Trade Returns.

THE clocks and parts thereof imported during November amounted to the value of £51,093 in comparison with £38,287 for the same month of last year, and £35,338 in November, 1886.

The following shows the sources of the supply:—

November	1886	1887	1888
From France	£17,464	£18,124	£21,032
" United States	£6,408	£7,992	£12,011
" Other Countries	£11,466	£12,171	£18,050

For the eleven months of this year the clocks imported have reached a total of £422,028, while for the same period of last year the value was £353,718. The first eleven months of 1886 showed a record of £335,130.

The watches and parts thereof imported during November are valued in the Board of Trade Returns at £41,434, against £73,499 in the same month of last year. The November of 1886 showed a record of £70,368. The eleven months of this year give a total of £537,459, in comparison with £678,079 for the same period of last year, and £634,606 for 1886.

The Plate and Plated and Gilt Wares exported last month reached the value of £46,769. In the same month of 1887 the value was £35,965. For the November of 1886 the figures were £35,785. The eleven months of this year show a record in value of £358,159 against £292,306 for the same period of last year, and £325,360 for the same months of 1886.

The total value of imports of every description last month amounted to £35,223,935. The same month of last year gave a record of £32,850,321, but the November of 1886 showed a record of £33,050,955. The eleven months of this year give the good total of £348,785,401 as imports, against £327,761,038 for the same months of last year. Less December, 1886 in comparison only showed a total of £318,452,803.

The exports for November amounted to £19,794,680, in comparison with £19,177,361 for the same month of last year. The November of 1886, however, only gave a record of £17,569,692. This year shows very favourably against its two predecessors, the eleven months showing a total of £214,919,728, in comparison with £201,012,976 for the same period of last year, and £195,310,485 for the first eleven months of 1886.

Clemence Frères' New Patent Chronograph.

THE following is the detailed description of a new chronograph, invented and patented (No. 9152) by Messrs. Clemence Brothers, of 11, Southampton Row, E.C. While the method of actuating the seconds chronograph mechanism does not materially differ in principle from the ordinary form, it will be seen that the minute mechanism embodies several important improvements—the removal of the latter from the neighbourhood of the former being, in itself, a decided advance in the direction of simplicity and soundness of construction, in both of which, in so far as we can judge, the claims of the inventors seem to be fully borne out.

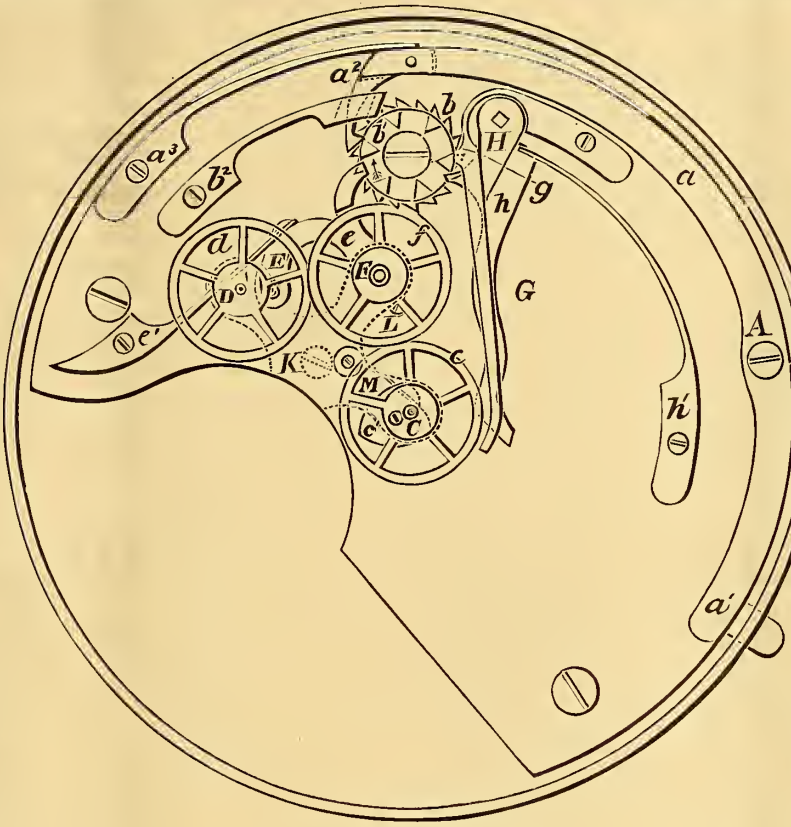


Fig. 1.

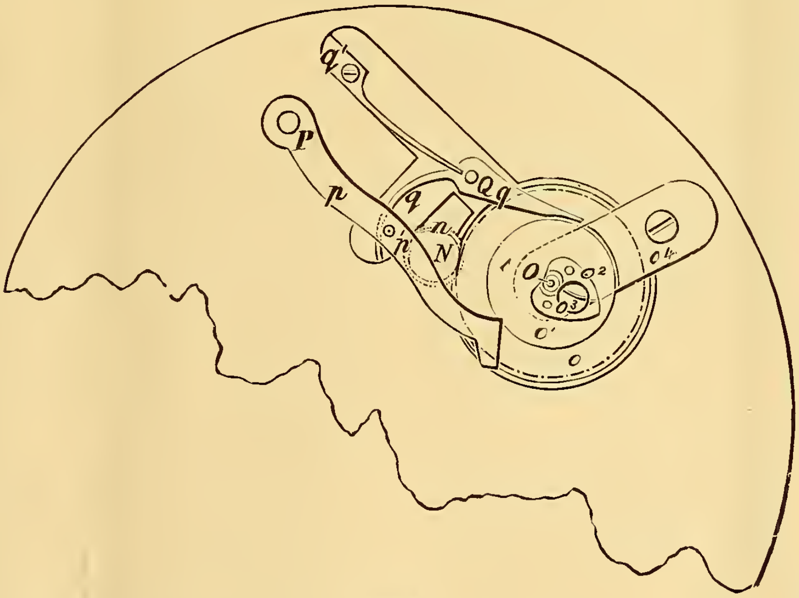


Fig. 2.

As the illustrations and descriptions respectively refer to one another we give the full transcript from the specification:—

The invention relates to a novel arrangement and combination of chronograph mechanism whereby great simplicity and facility of construction are obtained.

The invention is represented in the accompanying drawings in which Figure 1 represents the chronograph mechanism upon the top plate and Figure 2 represents the mechanism under the dial for acting upon and shifting the register minute hand of the chronograph dial.

We will first describe the chronograph mechanism represented at Figure 1.

A is the axis of the lever *a*, which is in communication with, and operated at its end a^1 by, a pusher connected with the stem winder, or by a separate pusher situated at other convenient position. This lever *a* carries at the other end a click or driver a^2, which is kept in gear with the teeth of the ratchet wheel *b* by a spring a^3; this same spring acts on the lever *a* and maintains it in a given position.

B is the axis of the ratchet wheel *b*, which is provided with 18 teeth, and of the star wheel b^1 fixed thereto; a regulating spring b^2, the free end of which is in communication with the teeth of the ratchet wheel, holds these two wheels in a given position.

C is the axis of the chronograph wheel *c* carrying the chronograph indicating hand and the heart shaped cam c^1; the shaft of this wheel passes through the hollow arbor, in which it is adjusted cylindrically and freely.

D is the axis of the seconds wheel, upon which is fixed the chronograph wheel *d*, this latter consequently makes one revolution per minute.

E is the axis of the arm of lever *e*, one end of which is in communication with the star wheel; this arm or lever is acted upon by a spring e^1 and carries the chronograph wheel *f*.

F is the axis of the chronograph wheel *f* formed with a serrated edge, as usual, which effects communication between the wheels *c* and *d*; this wheel is adjusted cylindrically and freely upon a pivot.

G is the stop lever of the chronograph wheel *c*, which is constructed so as to be always capable of holding itself against the star wheel.

H is the axis of the readjusting lever *h* of the cam; this readjusting lever is held in communication with the star wheel by a spring h^1.

K is the cock or bridge of the chronograph mechanism. In order that the parts of the chronograph mechanism may be more readily seen we have represented the outline of said cock or bridge only in dotted lines.

L is the stop screw of the piece *e*.

M is a break which regulates the motion of the chronograph hand.

The above described mechanism has for its object,

First. To put in motion the chronograph hand, which travels round the dial in a minute and makes five beats per second.

Second. To effect the stoppage of this hand in any given position.

Third. To return the hand to its starting point, which is 60.

These three effects are obtained by pressing upon the pusher and thus operating the lever *a* three times, the angular motion of which is regulated so as to produce each time the passage of one tooth of the ratchet wheel *b*.

The angular distance of three teeth of the ratchet wheel *b* corresponds to that of one tooth and one space of the star wheel b^1.

The arms of the pieces *e*, G, *h*, are placed in such manner that two of them are pressed upon teeth whilst the third is within a space of the star wheel.

The succession of effects is obtained as follows, taking as the starting point the position of the arm *e* within a space, that is to say, the wheel *f* in contact with the wheel *c* and consequently the chronograph hand in motion.

First effect. By pressing upon the end of a^1 of the lever *a* the ratchet wheel *b* is caused to turn the distance of one tooth in the direction indicated by the arrow, causing a tooth of the star wheel to encounter the arm *e*, which puts the wheels *f* and *c* out of gear.

At the same instant the nose *g* of the stop lever G enters one of the spaces of the star wheel and the end of this same lever at the same time presses against the circumference of the wheel *c*, by which action the chronograph hand is stopped.

Second effect. A second stroke of the pusher turns the ratchet wheel *b* one tooth, which causes the stop lever G to recede from the wheel *c* and moves the readjusting lever *h* against the heart-shaped cam, which will be rotated by the angle of the readjusting lever until the latter comes against and rests upon those parts of the two curves which are nearest the axis thereof.

This position corresponds with that of the chronograph hand when at rest at 60.

Third effect. A third stroke of the pusher causes the readjusting lever to recede from the heart-shaped cam and the gearing together of the wheels *f* and *c* and consequently the starting of the chronograph hand.

These three effects succeed each other at each stroke of the pusher.

We will now describe the mechanism represented at Figure 2 for registering each minute completed by the chronograph hand.

N is the axis or face of the pinion n of 18 teeth fixed on the arbor of the small wheel and gearing with the wheel o.

O is the axis of the wheel o of 72 teeth; o^1 stop disc; o^2 heart-shaped cam; these two latter parts are fixed together by two screws and are adjusted cylindrically and freely on the shaft O.

o^3 is a flexible blade fixed to the heart-shaped cam and one end of which enters the groove formed in the shaft O; the pressure of this blade against the shaft is sufficiently strong to enable the cam, and consequently the disc, to participate in the rotary motion of the shaft O: the cam carries a cannon shaft on which is adjusted the minute hand for registering each minute completed by the revolution of the chronograph hand.

P is the axis of the readjusting lever p of the cam o^2; this axis is the same as that of the readjusting lever h of the chronograph.

The readjusting lever h of the chronograph and that (p) of the minute register are fixed on the same shaft and cannot move independently of each other.

Q is the axis of the stop lever q of the disc o^1; this lever is operated upon by the spring q^1, which constantly tends to separate it from the circumference of the disc. The readjusting lever carries a pin p^1, against which the stop lever q can bear; it is by means of this pin that the readjusting lever compels the stop lever q to press against the circumference of the disc, causing it to be arrested and with it the register minute hand.

This mechanism has for its object,

First. To put in motion the register minute hand, which is carried round the small dial or circle arranged on the ordinary dial, in 30 or 60 minutes, according to the proportions of the gearing.

Second. To effect the stopping of this hand in any position.

Third. To return the hand to its starting point, which is 60.

These three effects are obtained by operating the lever a of the chronograph as described with respect to Figure 1.

The action is effected as follows, assuming as the starting point, the register minute hand to be stopped at 60, coinciding with that position of the chronograph hand, the nose of the readjusting lever being in one of the spaces of the star wheel.

First effect. By presing on the end a^1 of the lever a the ratchet wheel b is turned the distance of one tooth in the direction indicated by the arrow; a tooth of the star wheel b^1 encounters the nose of the readjusting lever of the chronograph and compels it to recede from the centre B a certain distance (this position is the one represented in the drawing), the readjusting lever of the minute register also participates in this motion, and consequently recedes from the cam o^2, no longer impeding its motion; thus the starting of the register minute hand will be effected. In this position the pin p^1 is in contact with the lever q.

Second effect. A second stroke of the pusher causes the ratchet wheel b to turn the distance of one tooth, and consequently gives a further motion to the tooth of the star wheel, against which the nose of the readjusting lever of the chronograph was resting, which compels it to recede again a further distance from the centre B; the readjusting lever p also participates in this motion, and the pin p^1 compels the lever q to bear against the circumference of the disc, thus stopping the minute register.

Third effect. A third stroke of the pusher causes the nose of the readjusting lever h to enter one of the spaces of the star wheel; the readjusting lever p then bears against the cam o^2, causing it to rotate until the lever p arrives at, and rests upon, those parts of the two curves of the cam which are nearest to the axis thereof, which position corresponds with that of the hand of the minute register when at rest at 60.

These three effects succeed each other at each stroke of the pusher.

We would here remark that we do not claim, broadly considered, the employment of star wheel, ratchet wheel, pawl, and regulating lever, trains of chronograph gearing for communicating motion from parts of the watch movement to the seconds hand and minute hand of the chronograph, and readjusting levers and heart-shaped cams for readjusting the chronograph hands to their starting points, as such have been previously employed of different construction and arrangement from our invention.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:

1. The peculiar arrangement and combination of parts of chronograph mechanism herein shown and described.

2. In chronograph mechanism the star wheel and ratchet wheel fixed together and mounted on the top of the back plate and operated upon by a pawl lever, which is acted upon at one end by a pusher, and at the other by a spring, substantially, as herein shown and described.

3. In chronograph mechanism the employment of an intermediate serrated edged wheel mounted on a pivoted arm or lever, acted upon in one direction by the star wheel and in the opposite direction by a spring to cause such intermediate wheel, whilst always remaining in gear with the chronograph wheel on the seconds axis of the watch movement, to be carried into and out of gear with the chronograph wheel on the axis of the chronograph seconds hand, substantially, as herein shown and described, and for the purpose stated.

4. In chronograph mechanism the employment of gearing for giving motion from the watch movement to the chronograph minute hand and of mechanism for starting, stopping and readjusting the same to the starting point, simultaneously with the chronograph seconds hand, substantially, as herein shown and described.

The application was made 22 June and accepted 28 Sept., 1888.

Palladium Alloys in Watches.

By PROFESSOR EDWIN J. HOUSTON.

AT a meeting of the American Philosophical Society, Professor Houston, one of the Committee of the U.S. Franklin Institute, stated that he had concluded his experiments on the Paillard watches. The following results were reached, viz.:—

A watch whose balance-wheel, hair-spring, and escapement are made of the Paillard palladium alloys can not have its rate sensibly affected by the influence of any magnetic field into which it is possible to bring it while on the person of its wearer.

In order to test this, such watches were carried into exceedingly powerful magnetic fields, and although carefully rated, both before and after exposure, no sensible change in their rate could be detected.

Experiments showed that the palladium alloys are entirely destitute of any paramagnetic properties. As far as the amount of the alloys at the author's disposal permitted, experiments failed to show that they possessed any diamagnetic properties.

A number of these alloys are made by Mr. Paillard. The composition of four described by him in his U.S. Patents, and numbered for convenience Nos. 1, 2, 3, 4, is as follows, viz.:—

Palladium Alloy, No. 1.

Palladium	60 to 75 parts
Copper	15 to 25 ,,
Iron	1 to 5 ,,

Palladium Alloy, No. 2.

Palladium	50 to 75 parts
Copper	20 to 30 ,,
Iron	5 to 20 ,,

Palladium Alloy, No. 3.

Palladium	65 to 75 parts
Copper	15 to 25 ,,
Nickel	1 to 5 ,,
Gold	1 to 2½ ,,
Platinum	½ to 2 ,,
Silver	3 to 10 ,,
Steel	1 to 5 ,,

Palladium Alloy, No. 4.

Palladium	45 to 50 parts
Silver	20 to 25 ,,
Copper	15 to 25 ,,
Gold	2 to 5 ,,
Platinum	2 to 5 ,,
Nickel	2 to 5 ,,
Steel	2 to 5 ,,

The complete masking of the paramagnetic properties of some of the ingredients of these alloys is of considerable interest, and would seem to indicate a true chemical union of their constituents. The most interesting results of these experiments, however, were those in which it was established that no matter of what materials the balance-wheel or hair-spring may be made, provided they are conductors of electricity, their movements through a magnetic field, when the moving masses properly cut the lines of force must result in a change in their rate of movement, and consequently in a change in the rate of the watch; or, briefly, it was established that a watch placed in a magnetic field acts like a dynamo-electric machine.

The amount of this action is exceedingly small. In order to detect it a very powerful magnetic field must be employed, and the watch subjected to its influence for an hour or more.

In order to obtain this field, and to properly concentrate it on the rim of the balance-wheel (thus placing said rim in a position analagous to the copper disk in the well known experiment between the poles of an electro-magnet), Prof. Houston mounted massive conical pole pieces, of soft iron, inside the pole pieces of the armature field of an Excelsior arc-light machine, whose armature had been removed. The space left between the opposing ends of these pole pieces was just sufficient to permit the introduction of the watch.

The watch was then securely fixed in place with its face upwards, so that the lines of magnetic force, concentrated on that part of the edge of the balance-wheel nearest the edge of the watch, passed through it at right angles to the plane of its movements. After an exposure of one hour to the influence of this extraordinary field, *the watch was found to have gained fifteen seconds.*

The author believes that the cause of the gain is to be ascribed to a decrease in the arc of oscillation of the balance-wheel, which would thus result in an increase in the rapidity of its movements.

The fact that the watch, after its removal from this powerful field, did not manifest any sensible change in its rate, shows the extent of the protection the palladium alloys give it against the effects of external magnetism.

The Diamond.

By W. Ford.

(Continued from page 104.)

REFERRING to the ancient Egyptians as being the first people to use the diamond: if we inspect the Egyptian figures traced on the stone walls brought from Egypt, we find a figure with a drill and a drill bow in the act of drilling what appears to be a stone; the drill and bow are formed precisely the same as those used in Idar, Germany, for drilling onyxes and other stones at the present time. As hard stone ornaments are found, many being corundum, among the ruins of Egypt, and also in the casings of mummies, it is reasonable to conclude that small pieces of rough diamond were brought into use for drilling the holes in such hard substances, as corundum, for instance, cannot be perforated by any other means. They must have either used the small, natural pieces of diamond, or crushed it into powder and used it with iron or other metal wire charged with the diamond, especially in making such small holes as seen in the stones exhibited in the British Museum and other collections. Although rough diamonds have not been found in Egypt, they were, no doubt, an article of commerce from other countries. Tropical countries are the most prolific in the production of diamonds and other gems. It would seem that where the sun shines in its greatest splendour, the greatest quantities of diamonds are found. It is also a well-known fact that where gold is found in any quantity, diamonds are not far off; for many explorers, whilst searching for gold in Brazil, have come across diamonds, but have, in many cases, for want of knowledge, thrown them away or taken no notice of them.

I will presently show that the minerals which form the component parts of gems are plentiful throughout the entire earth. We can obtain all the necessary materials in profusion, and we can separate the gems into their component parts, but all the accumulated science of the present and past ages has not yet succeeded in producing gems by artificial means. Scientific men have tried; books have been written pretending to have succeeded; but all to no purpose. Carbon is found everywhere; in the coal and wood which we burn, in coke especially large quantities are found. Here again great heat has something to do with the matter. But it is all uncrystallised, very brittle and opaque, and apparently of no value; but when it is crystallised it is the hardest substance in existence, and when free from any foreign matter, such as oxides, &c., and cut and polished, it shines with more brilliancy than any gem that nature produces. Black carbonate, although unevenly crystallised, is of about the same specific gravity, but in appearance it is dull, black or blackish-brown and alco-blueish in colour. Some pieces would be mistaken for pieces of common coke, to all appearance valueless; but this carbonate has, within the last few years, proved to be one of the greatest friends to modern science; for when the engineers were piercing granite rocks for the formation of the various tunnels in Europe, they would have made but sorry progress had it not been for carbonate. The resistance to hardened steel broke the ends of the drills or blunted them in a few turns or strokes of the machine, according to the kind of drill used, but when the natural pieces of carbon were brought into play a very different result took place.

(To be continued.)

The Merchandise Marks Act.

IN the Blue Book just issued by the Government—the Thirty-second Report on the Customs for the year ended 31st March, 1888, in addition to the statistics which are usually given, the report this year deals with the first three months of the working of the Merchandise Marks Act, and details are given under this head. The authorities ruled that a trade description in English on German, Swiss, and French made goods was ruled inadmissible unless qualified by a mark distinctly showing their origin, though they made exceptions in certain cases, including the English words "fast" and "slow" on regulators of Geneva watches.

Speaking of the working the Commissioners say that they have stopped at the English ports in consequence of the alleged infringement of the Act, clocks, watches, watch cases, optical instruments, files, and springs, and alluding to the working of the watch clauses give the following particulars:—The Act deals in a special manner with one class of goods, *i.e.*, watches. Sections 7 and 8 relate to this subject. The expression watch for the purpose of the former section means all that portion of a watch which is not the watch case. Where a watch case has thereon any words or marks which constitute, or are by common repute considered as constituting a description of the country in which the case was made, and the watch bears no description of the country where it was made, it is laid down that the marks on the case shall apply to the watch itself. In the event, therefore, of a watch case being marked with a British Hall Mark, or with other British indication, or with a name purporting to be that of a British manufacturer, and in the absence of any marking on any portion of the watch, the effect of the marking on the case would, generally speaking, be an indication that the whole watch was of British origin; or in other words, the mark on the case would reach, in its effect, to the dial, the dome, and the plate. To meet this general provision of the law we have issued an order to our officers (the order is printed below) as well as to guide them in carrying out section 8 of the Act as to marks on foreign watch cases.

Towards the close of last year the Swiss Government adopted a mark to be placed upon silver watch cases which might or might not contain the words "carat" and "sterling silver," in conjunction with the three figures a bear on a shield placed triangularly. "We are advised," say the Commissioners, "that while the word 'carat' was unobjectionable as being in general use, the expression 'sterling silver' fell within the Act, and we have accordingly required that the words 'sterling silver' if used should be qualified by the proper indication of origin of the goods on which they were placed."

As proof of the work entailed in the administration of the Act, it is stated that in the first quarter of the year more than 5,200 papers were registered in reference to the Merchandise Marks Act alone, the larger proportion involving special reports, while in the same period the 110,000 cases and packages were detained on the ground of infringement. The majority were afterwards delivered up on the illegal marks to which they applied being destroyed or qualifying marks added, though in some instances the importers have preferred to abandon the goods rather than comply with the requirements of the Act as to marking.

The following is the text of the special order relating to the importation of watches, and the manner in which the Customs officers at the several ports should deal with the watches and cases sent from abroad.

Custom House, London,
January 18th, 1888.

Sir,—In accordance with paragraph 33 of the General Order, I now transmit to you the directions of the Board, to enable you to deal with watch cases and watches, under the Merchandise Marks Act; the latter term, watches, meaning as provided by section 7 of the Act, "All that portion of a watch which is not the watch case."

Your attention has already been called to the position in which watch cases under this section stand in relation to watches; and the consequent importance of the Assay Mark on watch cases, which mark, by virtue of section 3 (1) of the Act, would be deemed a trade description as to place or country of origin.

You will note, in addition, that by section 8 (1) of the Act provision is made for preventing foreign-made watch cases from obtaining the mark placed on a watch case made in the United Kingdom. and it is enacted that a different mark shall be placed on foreign watch cases of such pattern, and in such mode, as directed by Order in Council.

An order in Council to this effect, dated November 28 last. was published in the *London Gazette* of December 9 last, and a copy of this order, together with sheets 1 and 2 of Appendix to Schedule 2 therein referred to, which contain diagrams of the required new marks, are sent to you herewith.

You will carefully study these sheets and note how the marks apply various to the different assay offices in the United Kingdom.

The directions to be observed by you in applying the new law will relate to

(*a*) Watch cases with Assay Marks imported alone.

(*b*) Like watch cases imported with the watches, that is to say. watches of foreign manufacture in them.

(*a*) Watch cases with Assay Marks imported alone.

If the cases are wholly unmarked, or are duly marked in accordance with Order in Council, or with a foreign Assay Mark, and there is not, in addition, any wording or any part of the case proper, or on the dome, indicating make or produce in the United Kingdom, the goods may be delivered. If, on the other hand, there is any such wording, the goods must be detained, and the matter referred to the Board.

If the cases are marked with a British Hall-mark as placed on watch cases made in the United Kingdom, you will detain the goods unless they are entered as "British goods brought back," in which case they may be admitted under the usual regulation.

(*b*) Watch cases imported with the watches in them.

If the cases are wholly unmarked or are marked either in accordance with the Order in Council, or with a foreign assay mark, or with a British assay mark as placed on a watch case made in the United Kingdom, with an equally conspicuous statement either above or below the assay mark, that the watch is of foreign make;

And if there is no wording either as an addition on the case or dome, or upon the watch itself, whether on the dial or the plate, or any part of the works, indicating make or produce in the United Kingdom, then the goods may be delivered.

If, on the other hand, there is any such wording, the goods must be detained, and the matter referred to the Board.

If the cases are marked with a British Assay Mark as placed on a watch case made in the United Kingdom, and with no statement of foreign make on the cases, as required above, you will detain them as a seizure, unless there is upon the dial of each watch and also on the top "plate" (where the watch is of that construction) visibly, between the "bridges" an indelible and definite indication of the place or country in which the watches were made, such an indication will be considered definite, if it is, or contains only the name of the place or country of origin; if in addition it contains the name of a place in, or a part of the United Kingdom, as, for instance, "Geneva and London," or if there is anywhere on the watch an indication by figures, words, or otherwise, that the watch might be the make or produce of the United Kingdom, then, in addition to the name of place or country of origin, there must be a distinct statement that the watches were there made.

I am, Sir, your obedient Servant,

E. Goodwyn.

The Duty on Silver-Plate.

THE following correspondence has appeared in the *Daily Chronicle*:—

Sir,—We trust that you will grant us space in your next issue for a reply to the letter published on the above subject in yesterday's paper.

It appears by Mr. Watherston's letter that it may now be regarded as certain that the duties on gold and silver-plate will be abolished in April next, and he is thus apparently in knowledge of the intentions of the Chancellor of the Exchequer. Notwithstanding this, he would like to say a few words to the working silversmiths, whose confidence he evidently doubts. The Royal Commissioners on the precious metals commend for adoption without hesitation the abolition of the duty on silver plate, and they also state that the duty on silver-plate amounts to 40 per cent. on the raw material, and which limits the demand for manufactured silver.

The raw material has very little to do with the matter, its cheapness, however, being in favour of retaining the present standard in England. Our assay is 925·1000th per ounce fineness, and nothing is allowed to be made below that standard, so that a foreigner or Englishman wanting our goods can rely that the silver he buys is properly hall-marked, duty paid, and stamped with the Queen's head, and as long as we keep that standard, English plate will maintain its priority.

Mr. Watherston states the various countries where the assay differs, and argues that our trade would increase in exports could our manufacturers be allowed to make silver to meet the demands of these foreign countries, especially Europe.

We can prove that the export trade is increasing, especially with Europe, for the reason they can depend on the silver-plate being up to the highest standard, and prefer it to their own under the various assays.

Mr. Watherston forgets that by abolishing the duty and compulsory hall-marking that silver (so-called) of the quality he mentions can be imported in any quantity, and to the detriment of the English working silversmiths, and the public would be imposed upon with a spurious article. But he says the home trade could be protected by voluntary hall-marking, and the English manufacturer could make up anything for foreign markets according to assay required.

We have the pleasure to represent over 100 firms, for whom we clear and ship silver-plate—in fact, nearly two-thirds of the whole quantity exported. We can assure you that, with a very few exceptions, the manufacturers and others are against the silver-plate duties being interfered with. It may not be generally known that large quantities of silver-plate are brought into this country without being assayed, and which could not pass if tried in the proper manner.

The said plate is brought over and declared to the Customs for private use, and not for sale or merchandise (the Customs' attention has been drawn to this matter, but they will not interfere), and although there is a penalty of £50 for selling plate not hall-marked and declared as above, yet no one thinks of proceeding against the persons for selling same.

There are thousands of ounces of this stuff being sold, and which is worth very little over 2s. an ounce. The importers of such are those who agitate for the repeal of the duty, and it is apparent that the English working silversmith must suffer by the introduction of such goods.

We feel that some movement should be made whereby the whole question could be more thoroughly sifted, and we are sure the working silversmith would take strong measures in order to protect their industry in this country.—We remain, your obedient servants,

J. Thredder, Son and Co.

25, Great Tower Street, E.C.,
December 4, 1888.

The Paris Exhibition, 1889.

THE law repealing the patent law of July 5, 1841, and the trade marks act of 1857 for products admitted to the Universal Exhibition of 1889, has passed the Senate and Chamber. The following is its tenor as officially promulgated by President Carnot:—

> Art. 1.—Every person holding a French patent, or having rights in France, shall be able, without incurring forfeiture, to introduce foreign made objects similar to those guaranteed by his patent, that shall have been allowed as exhibits at the Exhibition.
>
> Art. 2.—Forfeiture will be incurred if the objects are not re-exported within three months from the official closing of the Exhibition.
>
> Art. 3.—Every person holding a French patent who shall have shown at the Exhibition an object similar to that which is guaranteed by his patent, will be considered as having exploited his discovery or invention in France since the date of the official opening of the Exhibition.

The forfeiture set out in article 32, paragraph 2 of the law of

July 5, 1884, will be suspended; the delay of forfeiture will run *de novo*, setting out from the official closing of the Exhibition.

Art. 4.—Objects figuring at the Exhibition of 1889, and for which a patent has been taken out in France, or a deposit of design or model of make registered, conformably to the law of March 18, 1806, or upon which will be placed a trade mark registered in France, in virtue of the law of June 23, 1857, and which will be protected from imitation, can only be seized by description in the interior of the Exhibition.

Objects exhibited by foreigners cannot be seized either in the interior or exterior of the Exhibition, if the seizer is not protected in the country to which the goods appertain.

At the same time, these objects cannot be sold in France, and they should be re-exported in the time fixed by Art. 2.

The present law, deliberated and adopted by the Senate, and by the Chamber of Deputies will be executed as a law of the State.

The above is dated October 30, 1888.

The Municipal Insignia of Loughborough.

THIS youngest of the Leicestershire boroughs had no sooner been incorporated, its representatives and officers elected, than the question of official insignia arose, which should worthily distinguish it among the numerous boroughs of the kingdom. It is a notable feature of modern corporate life that the tendency to emphasise the importance of local and municipal government, which is a distinct tendency to decentralisation has been shown in no more marked way, than in the desire to represent this government in a visible and artistic form. The mayoral chain, the mace, the borough seal, as appropriate subjects for decorative art have received a degree of public attention, never manifested before.

In the present instance, the elected mayor, Mr. Alderman Griggs, led the way by a commission to Mr. B. Baldwin, of the Market Place, to secure a gold chain of office, intended as a gift to the Borough. A design was prepared by Mr. E. S. Baldwin, and the work was entrusted to Messrs. T. & J. Bragg, the well-known goldsmiths of Birmingham. The chain is now completed, and is already a most interesting record of the historical relations of the district, while space has been provided for adding yearly a successive indication of the future occupants of the civic chair. The gold is of 18-carat quality throughout, every link of chain being hall-marked, and the badge depending from it, which is also arranged to be worn as separately on semi-official occasions, is a carefully considered work of art. The form, of a general lozenge shape is so varied by interlacing scrolls of open wrought and repoussée work, that its size and massive character is unnoticed in the delicacy of the treatment, while the arms, crests and motto of the borough given in correct heraldic blazon, in enamel, are fitly framed by the supporting ornaments. The combined armorial bearings of the Beaumont, Hastings, and De Spencer families carries the town far back with remote history, and have been well combined by the Heralds College, while the motto "In veritate victoria" is suggestive. The raised gold letters forming the words "Borough of Loughborough," are arranged upon the upper framework, and the date "Incorporated 1888" is similarly given upon a gold riband above the shield. Oak and laurel appropriately enwreathe the side, and Leicester and De Lisle rose appear at the apex of the frame of the badge. On the reverse is engraved the inscription "Presented by Alderman Joseph Griggs, First Mayor of the Borough, 1888., John Jarratt, Town Clerk." The centre link of chain, it was held essential to be occupied by the arms of the First Mayor, Mr. Alderman Griggs, who was also the donor. The arms are granted by special charter, are well blazoned in enamel, having a mural crown in the rear to indicate the Mayoral Office, while two maces support the sides. It was a graceful act of courtesy on the part of the Mayor, as donor, to represent also on several links of the chain the arms of four leading families, Herrick, Packe, Paget and Warner, whose members have for generations, been intimately connected with the town and its fortunes. The effect of the decoration is greatly enhanced by the charms of crests and the colours of shields, in enamel, while there is still ample room on the circle of the chain for cognisances of future mayors. The letter "L," the initial of the Borough is ingeniously arranged as a connecting link with the larger ones, bearing escutcheons, the shape of which is bold and effective.

The Seal which has also been executed by Messrs. Bragg, is circular in form with the legend and date on outer border. The arms are bold and effective, each colour of the blazon being shown heraldically, the background having a gothic diaper, and a series of arches in beautiful tracery of the same period encircling the heraldic charge.

The silver mace, the gift of Mr. Alderman Barrowcliffe to the Borough, is large and massive without losing grace of line. It has a large number of special features, the most noticeable being the rich curves of the four arms of the crown top, which approach in character the famous ancient mace of Stratford-on-Avon; but unlike that example, the lion rampant holding in his hand the manneh, and standing upon a foot of the crest of the town, occupies a fitting place at the summit.

The royal fleurs-de-lis and Maltese crosses grace the field. The head of mace bears the arms of the town, and on the reverse the royal arms, as the mace officially represents the delegated royal authority.

The mace is designed, like the finest ancient specimen, to stand firmly erect when held, supported or on a table. The royal arms again being displayed in recessed panel at the lower end. Several knops, appropriately decorated, occupy positions in the column to assist in holding in various ways as also of carrying on the shoulders. One of these has the cognisance of the donor and the inscription recording the gift.

Altogether the newly enfranchised town may be congratulated on the completeness and perfection of the insignia, and the makers on the manner in which they have executed the work.

Sea-shell Industry of Singapore.—Consul Studer, of Singapore, in his last report on the trade and industries of the Straits Settlements, says that for receiving and shipping sea shells of great variety in colours, forms, and sizes, Singapore is very important; and a great many kinds of shells which a few years ago were only bought by travellers, naturalists, and collectors of curiosities at nominal prices, are now eagerly sought after and bought by agents and firms for shipment to Europe and the United States, where they are used in the manufacture of a variety of articles. They are received in Singapore from all parts of the Indo-Malayan Archipelago, the Coast of Siam, Burmah, and China. They are divided into three classes—mother of pearl shells, assorted shells, and green snail shells. Mother of pearl shells are almost entirely received in Singapore from Borneo, the Suloo Islands, and the South-Eastern Archipelago, including the Moluccas. Assorted sea shells are neither imported nor exported by weight, but in almost any way they can be bought from the natives. There is much guesswork as to quantity in buying them, as they are nearly always bought by the boat-load or basket, or in the case of the rarer ones, by the hundred or thousand, if counted into assortments. In exporting them they are nearly invoiced per assortment at so much per thousand. In the year 1885 the value of assorted shells imported amounted to £2,500, and of those exported to £2,800. Green snail shells are a land shell, strictly speaking, of short spiral form, about one inch long, and of about five-eighths or three-fourths of an inch in diameter in the thickest part. In colour they are a pale green, suffused with yellow. They are common throughout Malaysia, but the Mergui Islands, on the west coast of Tenasserim, contribute a large proportion of those exported—nearly one third. Consul Studer states that, some years ago, these shells, beyond purchases by naturalists and curio hunters, did not enter into commerce at all, but they gradually found their way into commerce for export, to be made into small buttons for kid gloves. They are exported almost exclusively to Austria, France, the United Kingdom, and the United States.

Electric Synchronisation of Clocks.

MONSIEUR AUGUSTE FÉNON describes in the *Revue Chronométrique* his improved system for electrically controlling clocks. In his system of electric synchronisation, M. Vérité employs an electro-magnet placed in the continuation of the balance arm arrived at the extremity of its course, and horizontal armature of soft iron, fixed to the balance perpendicularly to the place of oscillation. In M. Wolf's application of this process to astronomical clocks, in 1870, he employed two electro-magnets placed each below the armature of the balance, at the two extremities of its course, and both energised at each second, by the current of the governing clock. *(It follows that these are only utilised alternatively, notwithstanding that the current traverses both of them.)* This disposition is composed of the armature C′ only, and of the two electro-magnets AA′.

Explanation of the Figure.

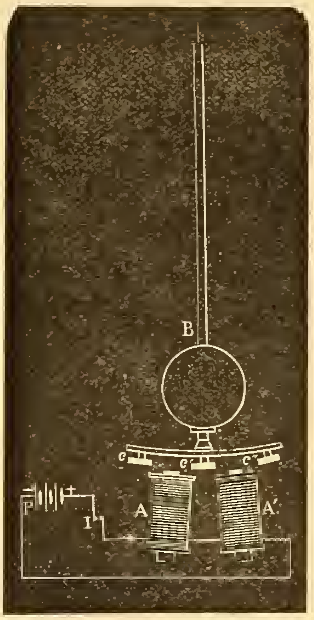
P. Battery.

I. Commutator of the governing clock destined to discharge at every second the current of the battery in the electro-magnets AA′.

AA′. Electro-magnets.—Under the influence of the current which traverses them at every second, they exercise their synchronising action upon the pendulum B.

B. Pendulum at the foot of which are fixed the armatures cc′c″.

c,c′c″. Soft iron armatures.—They are found over against the poles of the electro-magnets when the pendulum oscillates, and has arrived at the end of its course.



In my system, which comprises three armatures, the two electro-magnets exert simultaneously, at each second, their action upon the pendulum. In effect, when it oscillates from right to left, the armatures c′c″ are in regard to the electric poles, and when it returns towards the right, it is cc′ which are energised. *The synchronising force is thus doubled.* This system has the advantage of being practicable with a very feeble current of some thousandths of an ampère which is sufficient to synchronise two clocks whose going may be very divergent, as well for fast as for slow.

Optical Glass.

THE following article, from which it will be seen the important part which the old firm of Dolland played in the early perfection of lenses, will be of interest to our optician readers; it is mainly derived from a treatise written for our contemporary *The Manufacturing Jeweler*, of Providence, U.S.A. :—The history of optical instruments and optical glass, of course, are contemporaneous, and of a comparative modern date. There is little doubt but that the ancients were acquainted with the power of magnifying by means of glass spheres filled with water; but in order to commence with the actual history of optics, we must pass both Roman civilisation and scientific development of the mediæval ages. We may first stop at about the beginning of the fourteenth century, at which time, says Mr. Molineux, in his "Dioptique," glasses were invented to assist persons with weak sight, a conclusion which he has well established by quoting a number of creditable authorities. Brother Jordan de Rivalto, it is said, told his audience in a sermon preached by him in 1305, that spectacles had been discovered about thirty years ago, and had proved themselves to be one of the happiest of inventions. It is believed that one Salvino discovered them, according to a monument which existed in the Cathedral of Florence before the repairs made at the beginning of the seventeenth century.

It is reported that Jean Baptiste Porta, a Neapolitan gentleman was the first to construct a telescope, according to a pasage in his "National Magic," by him printed in 1549. He says, "Provided that you shall properly understand the manner of joining or adjusting the two glasses, that is the concave and the convex, you will see the object equally near and far, and even more distinctly than they appear naturally. By this means we have been able to assist many of our friends who could only see either remote or near objects in a confused manner, to see distinctly in both cases." It seems from this, however, that the author has reference to adjusting concave and convex glasses to correct defects of vision rather than to the telescope.

According to Sistorias, in his treatise on the telescope, one Jean Lipperson, or, according to Borel, Lacharie Hansen, presented a telescope to Prince Maurice fifty years afterward, and Borel, who wrote a book on the invention of the telescope, says that the telescope arose by accident. Some children were playing in the workshop of their father, and told him that when they held in their hands two glasses and placed one before the other at a distance, they saw certain objects much larger than ordinarily, and as if they were quite close, only upside down. The father, struck by this phenomenon, adjusted two glasses in a frame, securing them in position by the aid of two brass circles, which could be shifted at will. Many persons came from curiosity to see this invention, which, however, remained for a long time unimproved. Some workmen living in the same town as Hansen improved on this arrangement. One of these, carefully noting the effect of the light, placed the glasses in a blackened tube; another adopted this precaution, and in addition placed the glasses in tubes sliding within each other.

The first telescopes of long range were constructed by Simon Marius, in Germany, and Gallileo, in Italy, who thereby rendered them adaptable for astronomical purposes.

LeRossi says that when Gallileo was at Venice he was informed that a species of glass was made in Holland for bringing objects nearer. After reflecting on the reason of this, he cut two glasses as well as he could, and adjusted them in the ends of an organ pipe, which resulted so well that he exhibited the marvels of his invention on the tower of San Marco immediately afterward. Gallileo after this devoted himself to perfecting the telescope, and this is the reason that the invention of the telescope is generally accredited to him. It is undoubtedly true that his glass was a prodigious stride in the advancement of science, but nevertheless it was still very imperfect; the object-glass being only a single lens, the light was necessarily much decomposed and the object rather obscured. Devices, therefore, became necessary to remove this defect, and Euler was the first to conceive the possibility and to apply the means to achromatising. This distinguished philosopher, observing that in the eye the different humors which traverse the luminous rays were so disposed that no diffusion of rays resulted, thought that we could imitate this perfection of nature by combining various media in the glasses. He calculated the curves of glasses between which water had been placed, in order to collect the rays of the different colors into the same forces. The experiments made according to his instructions did not quite attain the end desired; still, the problem attracted the attention of scientists, and it did not long remain unsolved.

John Dolland, of London, sought in 1753 to correct this aberration of refrangibility by combining several glasses of different curves. His first experiments were not very successful, but the result sought was obtained after many experiments, by giving the proper curves to object glasses consisting of flint and crown glass. The next difficulty was to obtain flint glass free from blemishes and striæ, which hitherto had deflected the rays and disfigured the objects. Many and futile were the attempts made to solve this problem, until at length it was discovered by a watchmaker by the name of Guinand, of Brenets, near Neûchatel, a man who possessed a little chemical or scientific knowledge, and who worked with no other resources than mechanical routine and that precision of execution which is so distinctive and characteristic of his countrymen. His efforts were without results for a long time, and every detail proved an obstacle to him, the laws and the properties of the bodies on which he operated only being discovered by a series of accidents. He succeeded eventually in producing flint glass exempt from striæ, however. Mr. Bontemps remarks; "The nature of my work had for a long time directed my attention toward the manufacture of flint glass. I had made several experiments when Mr. Leresbours put me into communication with one of the sons of Mr. Guinand, who desired to sell his secret either in France or England, and which we bought in 1827. General meltings made under the direction of Mr. Guinand having produced no results, the agreement was dissolved, but it was decided to continue the experiments without excluding Mr. Guinand, to whom we owe the knowledge of the principles which formed the essential base of the manufacture, and from the first melting made in 1828, under my direction, we produced flint glass, several discs of which were presented to the Academy of Sciences in October, 1828, and from this date the manufacture of flint glass was regularly commenced."

The above about embraces the correct history of optical instruments, and without entering deeply into the manufacture of optical glass, it may be useful to examine superficially what are the qualities required, and what defects are to be avoided in manufacturing it. Although the manufacture of crystals has, on the continent, been carried to a high state of perfection, this material, although apparently of great purity and transparency, and peculiarly adapted to the construction of beautiful vases, is, nevertheless, entirely useless for being ground into lenses. Mr. Dolland declared, in 1828, that for the space of five years he had not been able to discover a disc of flat glass of four-and-one-half inches diameter, suitable for an object glass. "The disc must not alone comply with all the requirements of perfect transparency and hardness; it is also necessary that all of its parts be homogeneous. If it do not comply with the latter requirement, the luminous rays are diverted from the direction they should follow, and, since they do not make the same focus the image becomes deformed. A glass, to all appearances free from striæ, is composed of several layers of equal density, and, consequently of equal refractive powers. It will be seen, therefore, that a glass thus conditioned, is useless for an eye piece. Now, if a glass almost perfect in appearance is useless for optical purposes, how much greater the difficulty to make a good instrument with one having lines and waves."

It is unnecessary to follow our author into the scientific details of the manufacture of optical glass. From whatever stand point glass is viewed—glass, this alloy of flint (silica), oxide of lead, and carbonate of potash—we must acknowledge that man possesses not another material as really useful to him, one that will so faithfully assist him in reading the secrets of nature; when arranged into a microscope it will reveal to him natural objects of one two-hundred-thousandth part of an inch in extent; when employed as a telescope it will show him stars, the light of which has taken thousands of years, at a rate of 192,000 miles per second, to reach the earth according to Herschel and other eminent astronomers.

Truly there is no other agent employed by man possessing properties equal to glass.

Gazette.

Partnerships Dissolved.

G. and J. C. Burrell, Sheffield, jewellers. Beecher and Watson, Holborn Viaduct, E.C., and Antwerp, diamond brokers. Vessey and Abington, Bristol, pawnbrokers. Hutchinson and Smith, Birmingham, manufacturing jewellers. W. Hunter and Co., Newcastle-upon-Tyne, pawnbrokers. P. and A. Guye, Farringdon Road and Geneva, watch manufacturers.

THE BANKRUPTCY ACT, 1883.

Receiving Orders.

To surrender in London.—George Bagnall Hammond, High Street, Notting Hill, jeweller. Maurice Bash, Hatton Garden, diamond cutter. David, Leon, Hatton Garden and elsewhere, diamond merchant.

To surrender in the Country.—Stephen Sayer, (trading as John S. J. Sayer and Co.,) Birmingham, jeweller. William Wetton, Brighouse, jeweller.

Public Examinations.

In London.—M. Bash, Hatton Garden, diamond cutter, January 23, at 11.

In the Country.—W. Wetton, Brighouse, Yorks, jeweller, January 28 at 11.

Adjudications.

In London.—C. B. Hammond, High Street, Notting Hill, watch and clock maker.

In the Country.—W. Wetton, Brighouse, Yorks, jeweller. S. J. Sayer (trading as S. J. Sayer & Co.), Birmingham, jeweller.

Notices of Dividends.

In London.—L. Kurtzig, late Dyer's Buildings, Holborn, ivory dealer, 1s. 5d., first and final, W. W. Feast, St. George's House, 6 and 8 Eastcheap.

In the Country.—W. Terry, Coventry, watch material dealer, 2s. 0d., first and final, Official Receiver, Coventry. W. Coady, Hanley, watchmaker, 2s. 0½d., first and final, Official Receiver, Newcastle-under-Lyme. C. Ankers, Southport, watchmaker, 10¾d., (2s. 6¾d., on new proofs,) second and final, Official Receiver, Newcastle-under-Lyme. J. Green, Sheffield, pawnbroker, 4¾d., final, W. H. Sheldon, Rotherham. Clara Ford and Ellen Pickersgill, (trading as J. B. Foord and Son,) Hastings, jewellers, 1s. 3d., first, Birmingham. S. Bradley, (trading as John Payne,) Birmingham, jeweller, 4¾d., 120, Colmore Row, Birmingham.

Amended Notice.

W. Terry, Coventry, watch material dealer, 2s. 0½d. Official Receiver, Coventry.

The Deeds of Arrangement Act, 1887.

Essex.

Morrison, Charles Sutton, 6 and 8, High Street, Plaistow, watchmaker. Trustee, W. Oxborrow, Carnarvon Road, Stratford, I.A. Composition of 6s. in the pound by three equal instalments, payable at four, eight and twelve months from date of deed, secured by assignment.

Fuller, George Afl., Heybridge, near Maldon, watchmaker and jeweller. Trustee, F. Holloway, 173, Balls Pond Road, N.

Lancaster.

Higson, David, 62, Oldham Road, Ashton-under-Lyne, pawnbroker. Trustee, J. C. M. Turner, Ashton-under-Lyne, accountant.

Jones, Henry James, 128, North Road, and 31, Ormskirk Street, St. Helens watchmaker and jeweller. Trustees, G. G. Poppleton, Temple Row, Birmingham, C.A., and another. Liabilities, £605 18s. 8d.; assets, £300. Deed of Composition dated December 17, 1888; filed December 24, 1888. Composition of 12s. 6d. in the pound by four equal instalments, payable at four, eight, twelve and sixteen months from November 21, 1888, secured by assignment.

Middlesex.

David, Leon, 42, Hatton Garden, diamond merchant. Trustee, J. W. G. Hill, 86, Colmore Row, Birmingham, C.A. Secured creditors, £2,404 13s. 1d.

Pembroke.

Nicholas, Thomas James, Main Street, Fishguard, watchmaker. Composition of 7s. in the pound, upon execution of deed.

Applications for Letters Patent.

The following List of Patents has been compiled especially for *The Watchmaker Jeweller and Silversmith*, by Messrs. W. P. Thompson & Boult, Patent Agents, of 323, High Holborn, London, W.C.; Newcastle Chambers, Angel Row, Nottingham; and 6, Lord Street, Liverpool.

16,626. L. Platnauer, Birmingham, for "Improvements in securing bows or rings to tubular attachments for watches and other analagous purposes. Dated November 16, 1888.

16,656. A. Edwards, Birmingham, for "Improvements in watches." Dated November 16, 1888.

16,724. C. Turner, Taunton, for "Securing keyless watch-bows, to be known as 'keyless safety watch-bow' and fastener for the same." Dated November 17, 1888.

16,796. J. H. Pollok, Glasgow, for "An improvement in the wet method of extracting gold from crushed ores or other finely divided auriferous material." Dated November 19, 1888.

16,872. A. R. von Klinkosch and J. R. von Klinkosch, London, for "Improvements in the process of and apparatus for making spoons and table-forks of silver and other metals and alloys." (Complete specification.) Dated November 20, 1888.

17,083. R. G. H. Tomson, near Manchester, for "The better security of watches from pickpockets, entitled 'Tomson's patent watch pendant swivel.'" Dated November 24, 1888.

17,106. H. Aitken, Glasgow, for "Improvements in obtaining metals from ores, the same being particularly applicable to the obtainment of gold." Dated November 24, 1888.

17,128. C. A. Mayrhofer, London, for "Improvements in apparatus for electrically regulating or synchronising clocks." (Complete specification.) Dated November 24, 1888.

17,162. M. H. Tilley, Birmingham, for "Improvements in securing brooch-pins to brooches." Dated November 26, 1888.

17,175. W. Ehrhardt, London, for "Improvement in watches." Dated November 26, 1888.

17,243. L. G. Jackson, Birmingham, for "Improvements in the pendants of watches and other similar articles." Dated November 27, 1888.

17,321. G. A. Raab, Liverpool, for "Improved watch protector for preventing a watch from falling or being snatched out of the pocket." (Complete specification.) Dated November 28, 1888.

17,326. A. W. Armstrong, London, for "The adaption of electricity or clockwork in connection with lenses, etc., to transmit advertisements automatically." Dated November 28, 1888.

17,345. G. Mitchell, Manchester, for "An improved automatic check recorder or tell-tale clock." Dated November 29, 1888.

17,492. F. B. Hill and J. T. Perry, London, for "An improved safety key for winding watches." Dated December 30. 1888.

17,506. W. Williams, Radcliffe, for "Improvements in watches." Dated December 1, 1888.

17,515. E. J. Trevitt, Birmingham, for "A new or improved combined bracelet or wrist attachment and purse." Dated December 1, 1888.

17,786. E. A. Billault, London, for "Improvements in the application of sulphate of silver to metallic surfaces, applicable to jewellery, clocks, and the like." Dated December 5, 1888.

17,984. F. A. Walton, Birmingham, for "Improvements in or connected with the combination of advertising matter with tubular or rod-shaped watch keys." (Complete specification.) Dated December 10, 1888.

17,985. M. Dehayes, Manchester, for "Improvements in studs, solitaires, and other similar fastenings and articles." Dated December 10, 1888.

18,207. J. Siebenmann, London, for "Improvements in watch protectors." Dated December 13, 1888.

18,415. H. Sandoz, London, for "A casket for repeating watches, with means for effecting the striking of such watches from the outside. Dated December 17, 1888.

18,549. F. J. Gardner and J. Collett, Birmingham, for "Improvements in the winding and setting arrangements and mechanism of keyless watches." Dated December 19. 1888.

18,628. G. Wilson, London, for "An attachment for watches for velocipedes." Dated December 20, 1888.

Recent American Patents.

Apparatus for Electrotyping. L. McMurray	393.170
Automatic Exhibiting Apparatus. B. Hamburg	393.898
Bouquet Holder. S. B. Coston	393,886
Breast Pin. A. Young	393.413
Combined Bracelet and Button Hook. A. Johnstone	393,239
Device for Exhibiting Magnetic and Non-magnetic Watch Movements. A. C. Smith.	393.402
Diamond Setting. G. Heppding	393,232
Eye Glasses. H. E. Kirstein	393.987
" "	393,986
Eye Glass Holder. M. Riggs	392,363
Eye Glass Holder. S. W. Saxton	392.367
Eye Glasses. F. Müller	392,522
Electric Alarm System. W. F. Rossbach	393.078
Electric Regulating and Hand Setting Mechanism for Clocks. W. S. Scales	392,230
Electric Self-winding Clock. V. Himmer	391.969
Electric Striking Attachment for Clocks. J. H. Gerry	393,637
Fastening for Jewellery. J. Long	393,993
Finger Ring. J. B. Newman	392,357
Mechanical Musical Instrument. G. F. Wells	393,456
Message and Time Recorder. J. C. Wilson	392,838
Opera. Field, or Marine Glass. W. A. Cardwell	392,851
Pendulum Regulator for Clocks. J. H. Gerry	393.638
Pin. B. A. Ballou	392.302
Process for Extracting Gold from Sulphide Ores, &c. A. Parkes	392.929
Rewinding Clock. C. E. Emery	391,886
Screw Holder for Watch Repairers. W. E. Counter	392.589
Shirt Stud or Button. G. A. Bowman	393.416
Stem Winding and Setting Watch. C. Kistler	392,580
Stop Watch. A. Henchoz (English patent No. 8,843)	392.729
Synchronising Mechanism for Clocks. E. Kronenberg	393.159
Timepiece Dial. M. V. B. Ethridge	393.000
Time Mechanism for Dampers. J. Fries	393,063
Time Recorder. W. M. Bundy	393.205
Watch or other Case. C. E. F. Lewis	393.248

Correspondence.

All Letters for Publication to be addressed to the EDITOR *of* THE WATCHMAKER, JEWELLER AND SILVERSMITH, 7, *St. Paul's Churchyard, E.C.*

All communications must bear the name and address of the sender, not necessarily for publication, but as a guarantee of good faith.

To the Editor of *The Watchmaker, Jeweller and Silversmith.*

SIR,—In your issue of December 1st, a notice appeared relating to an action brought against us by Mr. J. F. Alexander. We desire to acquaint you that the case was tried today before a jury and *decided in our favour.* We trust you will mention this fact in the next issue of your valuable paper, and we have the honour to be

Yours faithfully,

BACKES & STRAUSS, Limited.

MAX STRAUSS, *Managing Director.*

64, Holborn Viaduct, London, E.C.
December 5th, 1888.

NEW AUTOMATIC CLOCK—ANTIQUE RINGS—BECK'S DAMP DETECTOR.

William I, Kaiser of Germany, will never be forgotten in the Fatherland.

However, if there are patriots who suffer from a weak memory and require an artificial remembrance, for these some ingenious individual has invented a clock, which will stir up every hour their enthusiasm.

Those who have been at the Prussian capital, on the Spree, (a pun is *not* intended), during the lifetime of the first Emperor of United Germany, doubtless went to see him saluting the relieving guard, which he did every day from the historical bow-window of the palace.

The inventor of the clock has seized upon this custom. His clock represents the palace; at the chime of the hour the miniature guard marches by, and the miniature Emperor appears at the window. This is the way they fan the flame of patriotism and loyalty in Germany.

Such a clock you should give to your friend who is a Radical, and believes not in the Divine right of Kings.

There is plenty of mental food for the mind of the jeweller at the British Museum. How many of our *confrères* are aware, though living perhaps within the shadow of its portals, that at this storehouse of the world's knowledge lie open to inspection nearly 3,000 rings of all ages? An illustrated catalogue of these gems has been published and induces my reflection.

The admirable article on "Rings" in the November issue of the *Watchmaker* treats better than I can of general ring-lore.

In the national collection is to be seen the ring which belonged to Polycrates. He could never get rid of it, and, having thrown it into the sea, found the ill-starred jewel again in the belly of a fish. The gods envied his luck—which proves their narrow-mindedness—and eventually brought the poor king to confusion. Schiller has used the subject for a ballad. This ring holds an emerald, engraved according to Herodotus, by Theodorus. An onyx, hollowed out for the reception of poison, and engraved with the ugly face of a fawn, is part of the collection. Is it the ring which belonged to the keeper of the gold at the Capitol? When Camillus possessed himself of the treasure, the custodian bit through the thin onyx-shell, and fell back dead.

All stages of art are represented, from the bean-shaped pebble, with the crudest design, to the most elaborate and costly specimen of the middle age.

The ring is the symbol of eternity, as many find out to their cost, who bound themselves to a life-long purgatory on saying before the altar, "With this ring I thee wed."

An invention, which, strictly speaking, does not fall within the ken of the watchmaker, though the form it assumes is that of a Waterbury watch, has been patented by Mr. F. W. Beck, 191, London Road, East Grinstead. Mr. Beck's watch indicates the state of the atmosphere—in other words, it is a damp detector. The coiled indicator in the centre of the dial, being extremely sensitive to any change in the atmospheric condition, points to Damp, Very Damp, Dry, Very Dry, Moderate, as it is affected.

This instrument is a valuable arm against that insiduous enemy of mankind—a damp bed.

HUGO.

[J. B. EDWARDS, *Talbot.*—Many thanks for the papers. Was there any thing in particular to which you desired to draw attention?—ED.]

The Watchmaker, Jeweller & Silversmith.

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The Watchmaker, Jeweller and Silversmith.

A Monthly Journal devoted to the interests of Watchmakers, Jewellers, Silversmiths and kindred traders.

Correspondence.—Correspondence is invited on all matters of interest to the trade. Correspondents will please give their full address in each communication, not necessarily for publication, but as a guarantee of good faith.

Subscription.—A copy of the Journal will be sent monthly for one year, post free, to any address in the United Kingdom or countries in the Postal Union for 5s. payable in advance.

Advertisements.—The rates for advertising will be sent on application. THE WATCHMAKER, JEWELLER AND SILVERSMITH will be found an exceptional medium for advertising. Special Notices, Situations, &c., per insertion, 1s. for two lines, prepaid.

Address all business communications to the Publishers,

MESSRS. TRUSLOVE & SHIRLEY,
The Watchmaker, Jeweller & Silversmith,
7, ST. PAUL'S CHURCHYARD,
LONDON, E.C.

Cheques and Postal Orders to be made payable to J. TRUSLOVE.

Editorial.

LANCASHIRE (or, rather, Prescot) is once more to the front. This time, not with the widely extended philanthropic views for the universal amelioration of the watch trade which distinguished it on a recent former occasion, but with the more practical, if humbler, scheme of bettering a section of its own workers. So many mysterious assertions and surmises have been going the round during the past month or so, as to syndicates, combinations, and, one might almost imagine, conspiracies, that have been formed, hatched, or are impending, that no apology is needed for our somewhat lengthy report published in this issue, of the important meeting of Lancashire movement makers (masters and workmen) held at Prescot the other day. A perusal of the speeches made thereat, and of the circular issued by the Lancashire Watch Company (also printed on another page) will show pretty clearly the state of the case. Although the speech made by Mr. T. P. Hewitt, who is managing director to the new concern, must be taken as an *ex parte* statement, in which he has naturally done his best to give a favourable colouring to the prospects of the undertaking, his views on the subject cannot be considered as altogether Utopian. While better wages are held out to the men as an inducement to unite with the Company, sacrifices will have to be made on both sides. "It was a great change for the masters, but they considered it would be impossible to arrive at an advance of prices, or carry forward the trade as they thought it should be, without some sacrifice on their part, and as a matter of fact they had sacrificed something. One firm would be able to employ and to sell goods, and they would in that way drive out this competition, which had been under competition." The immediate sacrifice on the masters' part is, we take it, that of the dignity of individuality, which is one of the stumbling blocks to a drastic improvement in branches of the English watch manufacture, other than the movement trade.

Mr. Hewitt exhorts the men to keep up the quality of the work, as an equivalent to the advancement in their wages, and urges upon the younger men the necessity of their acquiring a better knowledge of mechanical principles. On the question of economy, he is of opinion that it is not a question of supply and demand altogether ; " the people who buy from us have no idea when they buy cheap watches that they are worthless." The under competition alluded to is that cutting down of prices (even to the cost of production) which has, during the late depression, been so disastrous to many other branches of the watch trade, as well as the movement-making industry. An instance of this, which he cites, is that of a contract being undertaken for the supply of 1,000 ¾-plate keyless movements at half-a-crown each. This contract, which had been entered into from sheer necessity, only left a margin of one penny on each movement. That is, we assume, " barring accidents ;" and clearly, as Mr. Hewitt thinks, when the trade gets to such a position it is high time to do something to alter it. In regard to the future operations of the Company, Mr. Hewitt asks, are they fitted to make these movements in the best form and with all the machinery adequate to the proper making of movements ? and admits that at present they are not. " We take this step on this ground, and this ground only—that we must make the present trade pay the workmen and men who put their money in it. If we do this, we can say to the people we have made it pay, and if we get new machinery we shall increase the trade immensely and be able to make it pay also."

The foregoing may be taken as embodying the chief heads of the movement makers' statement of their case, and, on the face of it, we do not see any reason for manufacturers, either at Coventry or elsewhere, putting themselves out about the matter. The trade can safely be left to take care of itself. No possible combination of the kind can be strong enough to control the market ; the most it can do is to produce a unification in the price of Lancashire movements. Should it attempt to do more than this (which there is no indication of at present) Mr. Hewitt's views on the law of supply and demand would very soon be considerably modified, as would also his notion of manufacturers' capability of judging of the quality of the goods they purchase.

General Notes.

The window of Mr. George Muir, jeweller, Renfield Street, Glasgow, was broken, and £80 of diamond jewellery stolen last month.

Messrs. Rotherham & Sons have been awarded a gold medal by the jury of the Melbourne Exhibition for their exhibit of gold and silver watches.

In the Applied Art Section of the Society of Arts, a lecture will be delivered, on March 19, on the Art of the Jeweller, by Mr. Carlo Guiliano.

The receipts for the rating of watches and chronometers at the Kew Observatory, for the year ending November 3rd last, amounted to £532 odd, against an expenditure of £106 odd.

Mr. Alderman Emanuel.—Mr. E. Emanuel, of the firm of E. & E. Emanuel, goldsmiths, &c., of The Hard, Portsea, writes contradicting the report of his death and burial, which was circulated last month and published in a London daily paper.

The Polytechnic Young Men's Christian Institute has arranged for 700 of its members to spend a week at Paris during the time of the great exhibition, and the president, Mr. Quintin Hogg, urges working men's clubs, &c., to make similar arrangements.

Hebrew Capital in the Jewellery Business.—Mr. Markens, in his recently published Book, entitled "The Hebrews in America," estimates the amount of Hebrew capital in the watch, diamond and jewellery business of the American continent to be £5,000,000.

Elizabeth Iles, otherwise Knox, who had been drawing a pension for the last nine years from the Goldsmiths' Company by means of false certificates, was examined at the Mansion House last month and was remanded. She admitted all the charges.

Since the above was in type, the accused died at her own house, the Lord Mayor having, in consideration of her weak state of health, admitted her to bail.

At Guildford last month, George G. Humphries, watchmaker, was committed for trial at the Borough Sessions on the charge of committing a series of watch robberies at various dates from his employer, Mr. R. W. Garwood, jeweller, of 120, High Street, Guildford.

The New York *Jewelers' Circular* for January says :—"One of the oldest and most reliable makers of church, chime-and-quarter clocks, railway and marine levers and tower clocks is the firm of W. F. Evans & Sons (Soho Clock Factory), Birmingham, England."

Mr. S. H. Hartley, clerk to the Prescot Board of Guardians, and whom many of our readers will remember in connexion with his enthusiastic advocacy of the Merchandise Marks Act, is a candidate for the local division of the County Council. It is thought he will be returned by a large majority.

At the Gloucester Police Court last month, Messrs. M'Elland & Goldsmith, hardware merchants, were fined £5 and costs on two charges of selling German tools as of the best Sheffield make. The Sheffield Cutlers Company, who prosecuted, proved that the goods were sold to the defendants as of German origin.

On New Year's Day, the premises of Messrs. Baines & Co., opticians, of High Holborn, were burglariously entered and a number of barometers and opera glasses, valued at £78, were stolen. A woman named Catherine Barragan has been remanded on the charge of being concerned in the robbery. Part of the property has been recovered.

Street's Indian and Colonial Mercantile for 1889 is now ready and can be obtained from the publisher at 30, Cornhill. Like its predecessors, the present volume is remarkably comprehensive in its information, and includes a vast amount of information likely to be of use to manufacturers, merchants, and others doing business with India or our other colonies.

The New York Standard Watch Co. offers a prize of 100 dollars for the best design for a trade mark, which shall be suggestive of their business, striking in appearance and attractive to the eye. All designs to be submitted on or before the first day of March, 1889, and the award to be made on March 15, 1889. Further particulars can be had by applying to the New York Office, 83, Nassau Street.

One of Messrs. Stauffer's London travellers was relieved last month of a bag containing a number of gold and silver watches by means of the *fac-simile* exchange trick. The lost bag was cleverly abstracted and the other one substituted while the traveller was at lunch in a restaurant, thus showing the robbery was planned beforehand. This is the second time Messrs. Stauffer have been victimised within the last few months.

"The True Position of Patentees" is the title of a shilling book by Mr. H. M. Thomas, published by Messrs. Ayrton and

Thomas, of 59, Chancery Lane. It is a comprehensive survey of the patent laws and systems of the various countries of the world, with observations on their relations to the interests of English inventors with a view to making clear the combined effects of home, colonial, and foreign patent laws and regulations.

On the 22nd ult., Mrs. Phelps, the wife of the American Minister, was informally presented by the Marchioness of Salisbury and Lady Rosebery with a beautiful bracelet in gold and diamonds. The bracelet is set with eleven choice brilliants of large size, mounted as a half-hoop, and bears the following inscription :—" Presented to Mrs. Phelps on her leaving England token of affectionate regard from some of her English friends, January 22, 1889."

The continued improvement in the timekeeping qualities of the watches submitted for the Kew tests, and the steady increase year by year in the number of watches submitted for trial, show the growing importance with which these competitions are regarded on all sides, and the emulative spirit they have gradually developed among manufacturers. Of the 31 watches showing the best performance during the 1888 trial, it will be observed not one has received fewer than 81 marks out of a possible 100.

Another point it is satisfactory to note is the preponderance of English makers' names among those highest on the list, and *especially for complicated watches.*

One of the weak points of English timing, as shown in some of the earlier trials and to which we called attention at the time, was the little care that was given to the compensation adjustment. That the importance of this adjustment is now fully appreciated may be seen from the high average of the marks awarded. The excellent performance of the watches on trial in this respect are highly creditable to all concerned, and it may seem invidious to particularise. We cannot refrain, however, from complimenting Mr. H. Golay on his phenomenal score in this connexion. His five best watches (for compensation) have received a total of 96·2 marks out of a possible 100, being an average of 19·24 for each watch, a record that will not be easily beaten.

A jewelled sword, gold mounted and set with upwards of 600 diamonds, rubies and emeralds, was recently sold at Messrs. Debenham, Storr and Sons' Auction Rooms, in Covent Garden. The sword, a capital specimen of native Indian workmanship, was an interesting relic, having been presented by Runjeet Singh, the " Lion " of Lahore, to the late General Van Cortlandt, C.B., who was Commander-in-Chief of the Maharajah's forces, and who rendered valuable service to this country during the Punjaub war. The sword realised 91 guineas.

Arthur Waldrun, traveller's porter, was charged before the Nottingham borough magistrates, on the 15th ult., with being concerned in a jewellery robbery on the previous day. The prisoner was engaged by the representative of Messrs. Joel Phillips and Son, of St. Mary Axe, London, to accompany him on his rounds in the town and to convey his samples on a hand-barrow. While the traveller was in a shop a case containing 100 watches, valued at £300, was removed from the barrow, which the prisoner stated he had left for a few moments. The chief constable informed the magistrates that he could offer no evidence connecting the prisoner with the theft, and he was discharged.

Between six and seven o'clock on the evening of the 15th ult., one of the shop windows of Mr. Bowman, jeweller and pawnbroker, of Old Street, St. Luke's, was broken by means of a brick being thrown through it. The policemen regulating the traffic at the corner, hearing the noise, were quickly on the spot, and at once arrested two rough-looking men, whom the bystanders accused of having committed the offence. Although some of the jewellery was scattered and considerable confusion resulted, nothing, we hear, was stolen.

The gold and silver plate which belongs to the Duke of Cumberland weighs, according to *Truth*, some twelve tons, and the jewels are valued at £400,000. The Duke's hereditary casket includes the famous pearls of Queen Charlotte (worth £150,000), which caused nearly twenty years' litigation between the Queen and the King of Hanover, as Her Majesty claimed them as belonging to England, while King Ernest maintained that they ought to have been sent back to Hanover in 1837, when the connection between the two countries ceased, as they had originally been brought from Hanover. He triumphed, and the jewels had to be surrendered, to the infinite disgust and mortification of the Queen and Prince Albert.

The Trade of Coventry.—Reviewing the trade of the year 1888, the *Coventry Herald* says :—The watch trade has shown fresh signs of life, though the withdrawal of skilled labour and capital during a severe period of depression have naturally diminished its power of production. The trade, however, is generally in a sounder state, workmen are more fully employed, and prices show an upward tendency. There has been a greater demand for the better class of work—a state of things which has in some quarters been attributed to the operation of the Merchandise Marks Act. Shopkeepers, we may reasonably conjecture, have done well, and an increasing number of them seem to find their interest in making their places of business more commodious and attractive. The industrial situation, viewed generally, is probably more hopeful than it has been at any other period in the history of Coventry.

Time Signals for Kew Observatory.—With a view of obtaining the time at the Observatory for pendulum work to a high degree of accuracy, and also for comparing daily the time as determined by the Observatory Transit with that distributed by the Postmaster-General from St. Martin's-le-Grand, a line has been set up placing the Observatory in direct electrical communication with the chief Post Office in Richmond, a relay and chronograph having been purchased and placed in the circuit ; every morning, excepting Sundays and holidays, the 10 a.m. signal from the Royal Observatory, Greenwich, is recorded beside the beats of the Observatory Standard Clock (French) on the same tape. The signals were observed daily by means of the galvanometer for the two previous months, but the chronograph was only regularly set to work on the 31st of October last, delay having arisen on account of the necessity of protecting the apparatus against lightning.

The World's Taste in Jewellery.—The Paris correspondent of a contemporary says that a clever French lady has prepared the following schedule of the world's taste in jewellery : *Oriental*—Beautiful stones ; poorly cut and poorly mounted. *Russian*—Faultless stones ; mountings which lack style. The jewellery is rich, but without taste or originality. *English*—Choice stones ; mountings beastly and excessively heavy. *German*—Poverty stricken and in bad taste. *Austrian*—Heavier than the English ; taste on a par with the German. *Italian*—Has not advanced since the days of Pompeii. *Spanish*—Nothing but votive offerings. *French*—With mediocre stones, a little gold and much taste incomparable jewellery is produced. However true the above estimate of English taste may be respecting the jewellery formerly turned out by our manufacturers, it is an undoubted libel on their modern productions, which it is just possible the clever lady in question has not had many opportunities of inspecting.

Jewel Robbery at Brighton.—A daring robbery is reported to have taken place at Messrs. Allen and Thompson's, jewellers, King's Road, Brighton, on the night of the 22nd ult.; jewellery worth £3,000 having been stolen. Mr. Thompson placed the jewellery in a safe in the evening, closed the shop, and went out with a friend. The shop was protected by iron shutters ; but on his return he found the safe open and the jewellery gone. The thief must have had duplicate keys of the shutter-door and safe, as the safe had not been forced. He must also have gained an entrance through the shutter-door while the King's Road was crowded with promenaders. The articles missing are a diamond necklace, large diamond bird-brooch, large diamond horse-shoe brooch, four diamond crescent brooches, diamond and sapphire crescent brooch, diamond and ruby crescent brooch, four single-stone rings, two diamond crystal rings, large diamond star, large single-stone diamond ring, three-row diamond and sapphire bracelet.

Safes.—A gentleman who has recently paid a visit to the United States and Canada gives in the columns of a contemporary some hints that are well worth the attention of safe manufacturers at home. In going over the works of our American cousins he specially noticed that in many departments a study is made of the beautiful as well as the useful. The superior appearance and finish of the American safes was such that they were ornaments to any office. He says: "Why cannot our safe manufacturers imitate the example of their opponents (for opponents they certainly are in many markets), instead of adhering to the present antiquated and unsightly styles? A little extra finish does not cost much, and why should we not endeavour to make things bright and cheerful? I am told that the extra embellishments in the American safes in no way interfere with their utility (and I see no reason why they should), and I cannot help thinking that much of the trade which has been gained by American and lost by the British safe makers is due to this fact —that we are far behind the times.

The New York correspondent of an American contemporary was shown, in that city the other day, one of the Paillard non-magnetic watches in an open-faced iron case, into which was beaten gold and silver in unique design, "the decorating having been done in Spain, and is such as is used by the Spaniards in decorating sword handles, snuff boxes, &c." This iron case, which is now being exploited (in connection with the non-magnetic boomerang) in the States as a novelty, is by no means new. We do not know when watch cases were first made in this inlaid iron work, but more than thirty years ago, watches having such cases were on sale at the house of the original Losada, in Regent Street, and the manufacture of inlaid iron jewellery is one of the oldest Basque industries. As anti-magnetic shields, these cases would certainly prove very effective. The only thing to prevent their becoming an article of practical commerce, is their dearness, which has limited the manufacture of the jewellery to a very small output. Perhaps primitive methods of production have had a good deal to do with the high price of this work, and as there would doubtless be a considerable demand for ornamental iron cases at a reasonable price, which, besides having claims to virtual novelty, have a practical value as a protector from magnetism, our manufacturers might profitably turn their attention to the subject.

Standard Time for Coventry.—It is a strange comment on the "fitness of things," says the *Coventry Watchmaker*, that whilst many large towns in which horology is not a leading industry are provided with an electrical time ball or gun (Nottingham for example), Coventry with all its numerous watch factories has no authoritative means of knowing "Greenwich mean time." We believe that the only method which manufacturers have of accurately timing their watches by Greenwich is that which is in certain instances allowed them at the Post Office, of utilising the ten o'clock current from Greenwich. This, however, is purely a favour which has to be treated as an exceptional privilege, and no wonder therefore that watch manufacturers are agitating the municipal authorities to provide a public time indicator. No doubt the rates should be jealously guarded by those who are entrusted with the spending of the public money, but where so large a number of the ratepayers are engaged in one industry, it cannot surely be extravagance to spend a little money on providing a public time indicator. It is a little disappointing to hear an eminent alderman saying he hoped the request would not convey the idea that Coventry watches were of such a type that they had to be regulated every day. The remark, however, only shows how those not acquainted with the trade may fall into blunders as to the actual use of particular instruments, and as the matter has been referred to a Committee of the Council, it seems probable that the time indicator may be secured for Coventry after all.

At the Portsmouth County Court on the 6th ult., before his Honour Judge Leonard, an action was heard in which Messrs. H. M. Emanuel & Son, jewellers and silversmiths, of Ordnance Row, Portsea, sued Messrs. Wray & Sons, manufacturing jewellers, of Birmingham, for money paid for one yacht club badge, bought as gold and found afterwards to be silver-gilt. Mr. G. H. King appeared for plaintiffs and Mr. Hyde represented defendants. Mr. Emanuel gave evidence to the effect that in 1883 his firm bought two yacht club burgee earrings, supposed to be gold, for members of the Portsmouth Corinthian Yacht Club. Three years later these badges were altered into pins. One of these pins was afterwards brought back by a customer to be altered into a brooch, and later to be again altered into a pin. When plaintiffs sent it up to a working jeweller in London, he wrote "Are you aware that this flag is only silver?" As a practical man plaintiff said silver-gilt enamel could not be distinguished from gold until it had been cut and tested. They bought none of these burgee brooches from any other firm, and were not aware that they were being manufactured in similar designs in Paris and London. He denied that in converting the earring into a pin the solder would eat into the silver and betray it. Mr. Hyde said this case was a serious one for his clients, and was casting a serious imputation upon a respectable firm. Mr. King said there was no imputation cast upon the firm. It was rather supposed that it must have been done by some of their workmen without the knowledge of the firm. His clients admitted altering the earrings in the first case, and said that the articles then were gold. They denied that the brooch in question was their workmanship, but suggested that it had been got from some other firm. Defendant also denied that the brooch in question from his examination had ever been an earring. Mr. Cairns, Mr. Bruce, and Mr. Dunmer, jewellers, gave evidence supporting the contention that the brooch had ever been an earring. His Honour wished to have it clear as to whether plaintiffs ever dealt with another firm for similar goods. The case was ultimately adjourned for a consultation between the parties.

The Diamond Market.—What has not been the case for some years, there has been a number of foreign buyers in the Amsterdam market from the first week in January, and, still more extraordinary, the local demand has not been inconsiderable. These phenomena are explained by the local Solons, with their duly accredited amount of phlegm, as occurring in consequence of the low prices ruling—a somewhat obvious conclusion; they do not, however, seem to be able to quite grasp the fact of the existence of such an unusual condition of things, and rather resent it accordingly.

Small stuff is neglected, but roses and cleaved stones are in request. The factories have now all resumed operations and are moving slowly.

The approaching exhibition is already causing some stir among the Paris workers, the setters being fairly busy. Some moderate sales are reported for the American market.

In the London market the large number of foreign dealers present throughout the month has kept up prices, and many would-be purchasers have returned home empty-handed. One point that is worth noting is the increased number of Antwerp representatives that now attend the sales, as showing the growing importance of that city as a diamond market. Very large parcels changed hands last month for this growing centre.

Latest from Kimberley report market weak with unchanged quotations.

Metals.—*Silver.*—Bars, 42⅜d. per oz.; Mexican dollars, nominal. *Copper.*—Chili bars, good ordinary brands, cash, £77 7s. 6d. to £77 17s. 6d. *Tin.*—Fine foreign, cash, Straits, £97 15s. to £98 5s.; Australian, £98 to £98 10s. *Lead.*—English, £13 7s. 6d.; *Spelter.*—Ordinary brands, £18 5s. to £18 7s. 6d. *Quicksilver.*—Importers' price, £9 10s.; second-hand parcels, £8 8s. 6d. to £8 9s. Market quiet but steady.

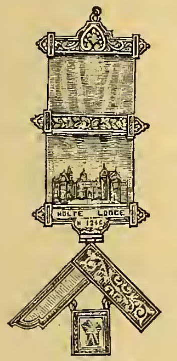
Trade Notes.

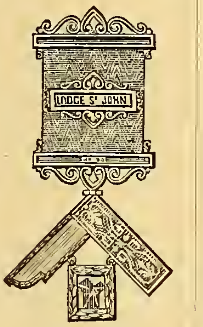
Messrs. Ehrmann and Bahlsen, diamond and share brokers, have removed their offices from 31, Holborn Viaduct, to 97, Hatton Garden.

Messrs. G. E. Walton and Co., of 52, Hylton Street, Birmingham, call attention, in their advertisement on another page, to a speciality they are introducing in the shape of a new easy-winding dust-proof watch key.

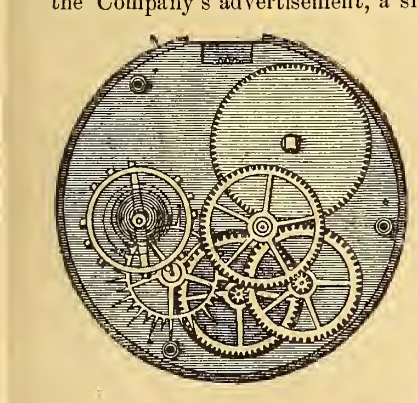
Messrs. D. G. Cresswell and Son, of Barkerend Road, Bradford, manufacturers of asbestos and India-rubber specialities for use in engines and other machinery, have sent us their last issued catalogue. The troubles incidental to heating, pressure, and chemical action, in bearings, joints and cylinders, etc., appear to be successfully overcome by the combination of suitable materials in the goods of this firm's make, and, judging from the excellent testimonials of creditable engineers, etc., who have practically tested them, they should be worth the attention of many of our readers who are users of steam power under abnormal conditions.

Messrs. P. Vaughton & Sons, of Great Hampton Row, Birmingham, send us illustrations of two new things in the way of masonic jewels, both of which are very appropriately and artistically carried out. The first is a Past-Master jewel for the Holte Lodge, No. 1246, and is carried out in the Elizabethan style throughout, the ends of the bars being copied from the gables of Aston Hall, the former seat of the Holte family, a model of which building is placed on the bottom bar. The title and number of the Lodge are enamelled in Elizabethan characters on the bottom bar, and the square is ornamented with Elizabethan scrolls in turquoise enamel. The other jewel, for the Lodge St. John, No. 70, is carried out in the Classic style, the bars consisting of plain ribbons of dead gold with raised lapped edges, ornamented with Grecian scrolls and curves. The square is carved and engraved with classic ornaments. Both jewels are in 18-carat gold and have the presentation inscriptions on the back. Messrs. Vaughtons desire us to say that their new catalogue is now ready, and will be sent post free to the trade on application.





New Waterbury Watch.—Retailers who stock "Waterburies," will see from the advertisement on another page that the long-promised ladies' Waterbury is at length an accomplished fact. The "Series L" ladies' Waterbury watch is, as set out in the Company's advertisement, a short wind, ¾-plate, quick train movement, having balance hole jewelled and setting hands from the pendant. It is a facsimile of the larger model "Series J," gentlemen's watch, and like that newly introduced watch, is entirely different in construction from the well-known "long wind," 10s. 6d. Waterbury, although equally departing from conventional design in many of its salient points. A snapped-on cover without hinge or joint, and a second, or "double" patent top plate are special features in the new watch for preventing dirt and damp from getting to the works, and the set-hand mechanism (Anglicé, motion work) displays almost equal inventive ingenuity to that which contrived the differential arrangement of the original Waterbury. The following advantages are claimed for the patent double plates ;—They hold the Balance Jewel in place without the aid of small fine thread screws. They have a screw that is used to secure the End Shake of the balance wheel, which can be adjusted by a screwdriver. The Jewel and End Stone can be removed at any time, and new ones put in, and the End Shake corrected with very little trouble. The Setting-Wheel is held in place between the plates, no extra piece of any kind being used. One of the Top-Plates holds the train (except the balance which is loose between the plates) when fitting the barrel and wheels. This plate is also recessed for the winding-works, jewel-socket and regulator. When the Train is found to be all right the finished Top-Plate is placed in position, being guided by the Steady-Pin and Jewel-Socket. The regular pillar screws hold both plates in position. This saves handling the Finished Top-Plate until the last operation, keeping it clean and free from scratches. The Dial is fitted into a brass dial-plate, which plate fits friction-tight on pins fastened into the pillar plate and can be removed and replaced as often as desired without requiring the screws or dial-pins now usual in other watches. The Hour and Minute Hands are fitted to the dial train before dial is adjusted to the plates, and the dial-plate can be removed and replaced without taking off the hands, making the dial work very simple. The Movement can be fitted to the case, or removed, by simply turning the case screw, thus dispensing with pendant screws or winding arbors, that are partly in both the cases and movements of other watches. To Set the Hands, push in the crown and turn in either direction ; upon the pressure being removed the crown and setting-pinion will return to their places in readiness to wind the watch. Hinged-Cases are not necessary because the case does not require opening to set the hands. The Top-Plate covers the pivot-holes and keeps them free from dust. While the foregoing apply to both of the new series advertised, the following refers more particularly to the ladies' watch. Each Top-Plate has a slot in which the Winding-Wheel is carried both in and out-of-gear with the Ratchet Wheel. This makes a Smooth wind, free from all yokes, leaves, studs, left-handed screws or hubs of any kind, being very strong and simple.



Messrs. Saunders & Shepherd, of Bartlett's Passage Buildings, Holborn Circus, E.C., are the English licensees of the Krementz patent "one-piece" stud, which is a leading article in the jewellery trade of America. As the name implies, the "one-piece stud" is formed of a single piece of metal, struck up in several ingenious operations. The firm now find it necessary to warn the trade against imitations infringing this patent, which are being offered as "one-piece," but which in reality are made of several pieces soldered together. They offer a reward of £20 to anyone who shall give such information as will lead to a conviction.

Board of Trade Returns.

THE clocks and parts thereof imported during December are valued at £47,242, in comparison with £44,186 in the same month of the previous year, and £45,746 in the December, of 1886. For the past year the imports of clocks show a total of £469,270, against £397,904 for 1887, and £380,876 for 1886.

The following figures show the sources of the supply :—

	1886	1887	1888
From France	£198,221	£188,961	£199,277
„ United States ...	£72,835	£93,307	£91,741
„ Other Countries ...	£109,820	£115,636	£178,302

The watches and parts thereof imported during last month amounted to the value of £47,910, in comparison with £72,713 in the same month of the previous year, and £77,022 in the December of 1886. For the whole of last year the imports of watches show a great falling off in value in comparison with the two previous years, the figures being :—1886, £711,628 ; 1887, £750,792 ; and 1888, £585,369.

The plate and plated and gilt-wares exported during December amounted to £33,707, against £36,535 in the same month of the previous year, and £42,349 of 1886. Although this shows a falling off for the month, the year gives more satisfactory figures, the record being for 1886, £368,392; 1887, £329,798; and 1888, £391,866.

The total value of imports for December amounted to £37,940,625, in comparison with £34,173,968 in the same month of 1887, and £31,011,283 in the December of 1886. For the whole of 1888 the total amounted to £386,582,026, against £361,935,006 in 1887, and £349,381,086 for 1886.

The total value of exports of British and Irish produce during December amounted to £18,814,209, in comparison with £20,385,464 in that of 1887, and £17,153,510 in that of 1886. The exports for 1888 show a record of £233,733,937, against £221,414,186 in 1887, and £212,432,754 in 1886.

Birmingham News.

From Our Correspondent.

A FAIR amount of activity characterises the opening of the year 1889 in the Birmingham jewellery trade, and while some houses complain of "things not having picked up again" as they hoped, after the Christmas holidays, on the other hand, a number of them report good business, and are increasing their staff. This is more especially the case with the diamond mounters and gem-ring makers. As I ventured to prognosticate in some former notes, there is an increasing demand for workmen in mounting diamonds, and at the present time there are several vacancies for good men of this class, with good wages attached. The diamond mounter should be a workman of taste, using the "piercing saw," "graver" and "needle file" with care and accuracy; he should also acquire a light and delicate touch, so that his work may partake of the same and give to the gems their full beauty and transparency. Young workmen will do well to bear this in mind, as their resources in this direction will be more called upon than ever in the future.

* * *

The stud and link manufacturers are also doing their share of business in all classes of goods, some of them being especially busy. Messrs. G. E. Walton and Co., Hylton Street, for instance, who have just added this line to their already numerous branches, report large orders in all qualities, from metal-gilt to gold in several qualities.

* * *

Another "veteran" has passed away from among us as the new year became a reality (if it may be so called when four days old), for on the 4th instant, Mr. Charles Thomas Shaw, of 66, Vyse Street, departed this life at his residence, Willowbrook, Selly Park, aged 70 years. Mr. Shaw (or "City Shaw," as he was called by his intimate friends in the trade) was one of the early pioneers of the jewellery trade in Birmingham, and the firm of C. T. Shaw and Son have continued to do a good trade until the death of the senior partner.

* * *

Messrs. Booth and Clutterbuck, chain makers, Northampton Street, have dissolved the partnership hitherto existing between them, Mr. Clutterbuck remaining in the old premises, where he will carry on his share of the trade, and Mr. Booth having cast his lot with his sons, Messrs. Booth Brothers, Northampton Street, the mounters of curios, etc., and thus added that of chain making to their already long list.

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Messrs. I. S. Greenberg & Co., jewellers and bullion dealers, are removing from No. 44, Frederick Street to Vyse Buildings, Vyse Street.

* * *

Mr. M. Gratz, jeweller and diamond merchant, has closed his Vyse Street house and has taken up his abode in London: his business address is now Hatton Garden.

* * *

The arbitrary position recently assumed by the Assay authorities, in the summoning of several shopkeepers for selling 9-carat wedding rings not hall-marked, has been freely commented upon by the trade, and I think the general opinion is that the step was uncalled for, and that the authorities have simply put another nail in the coffin of compulsory marking by the step they have taken: this is "a consummation devoutly to be wished" for.

* * *

Another new venture in the shopkeeping line is that of Mr. J. Dunlop, watchmaker, of Hockley Hill, he having just opened a retail establishment in Great Hampton Street, opposite Vyse Street, for the sale of watch materials and tools—a rather bold venture, as he has two well-established competitors not many doors away in the same street, Mr. Chas. Bannister and Mr. J. Wolfe; and also Mr. J. Brown and Mr. Krauth on the other side of Hockley Street in Great Hampton Street. He is evidently a strong disciple of the "nothing venture, nothing win" fraternity, and I wish him every success: "none but the brave deserve the fair."

* * *

I have also to record with regret the death of another well-known member of the trade, Mr. Austin B. Lines, who was a member of the firm of B. Lines and Son, Vittoria Street, Birmingham, dealers in rolled metals, alloys, etc. Mr. Lines was a metallurgist of no mean order; he was well known in Birmingham through his active work as a member of the St. Paul's Ward Committee of the Liberal Association; he was also a prominent member of the Handsworth Local Board. He died at his residence, Granville House, Hall Road, on the 11th instant, after a very short illness, at the comparatively early age of 45 years.

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The business of Messrs. F. J. Braham and Co., spectacle manufacturers and jewellers' factors, is removed to Vyse Buildings, Vyse Street, Birmingham, where the trade will be carried on as Walter Braham and Co., the son becoming a member of the firm. It is proposed to extend the business in the new premises, and add that of manufacturing jewellers to their list. There are commodious workshops attached to the new place.

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The first dinner of the Jewellers' and Silversmiths' Association is announced to take place on January 28th, 1889, so that by the time this is in print the event will have taken place. The Right Honourable Mr. Joseph Chamberlain, M.P., has promised to be present. The Association should consider itself highly honoured for so young a member of trade societies to be visited by the late President of one of the oldest of trade (shall I say societies?) I mean the Board of Trade.

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Among the manufacturers of jewel cases, I have noticed Mr. Fred W. Atkins, of Vyse Street, coming conspicuously to the front of late. He was selected by the committee to case the jewels presented to Mrs. Chamberlain, and he is well known in the Birmingham trade as producing first-class work.

Sheffield Notes.

From Our Correspondent.

Mr. Edward J. Watherston, of Pall Mall East, London, is getting almost funny in the serious pertinacity with which he trots out his favourite hobby. The Sheffield papers of January 7th contain yet another letter from his prolific pen on the—to him—all absorbing theme of the abolition of the Plate Duties and Hall-marking. How Mr. Watherston has got to know what nobody else seems to know—that the Plate Duties are to be abolished this year—is a mystery. As I indicated last month, the abolition of the duties is a matter of indifference to manufacturers here, so long as the drawback is satisfactorily dealt with. The Hall-marking part of the question, however, is a horse of another colour. On this point silversmiths express themselves strongly enough privately, but whether it is that they have not hitherto taken Mr. Watherston seriously, or what is more probable, that what is everybody's business is nobody's business, certainly they have not as yet spoken out publicly against a course which they regard as being detrimental to the best interests of the trade. Should it turn out, however, that the authorities really contemplate the abolition of Hall-marking, it is more than probable that the Cutlers' Company, now that they have obtained a *locus standi*, may have something to say in the matter.

A question around which much heated controversy has been raging recently is that of the Government sword contracts. If there is a place anywhere where such contracts might naturally be expected to go, it is to Sheffield. They have not, however; but probably little notice would have been taken of the fact, had it not been for the recent reported failure of these weapons in action. The question at once arises, "Who is to blame?" and it is so far satisfactory to be able to answer that at any rate no blame can by any possibility attach to either the material or the workmanship of Sheffield. A firm in the south obtained the last contract for 50,000 sabres, and in the exercise of their discretion had them ground at Solingen. In this they were of course within their rights, but they acted injudiciously in giving as their reason that they could not obtain grinders in Sheffield who could do the work. Here was fat in the fire at once. The Sheffield Trades Council declare that the real reason is because the firm in question got the work done for one shilling per sword less in Germany than in England. This is of course a sound economical reason, but it is none the less awkward for the contractor when weapons made under such conditions do not stand the test of actual warfare.

This question of the competency of workmen suggests a curious fact in connection with some of the Sheffield trades. That is, that not a few of the staple trades of the town, and even branches of the same trade, are hereditary, having descended from father to son from time immemorial. This has had the effect of creating certain physical characteristics in the individual members of those trades. Thus, as a rule, saw and scythe grinders are big men; table blade grinders, medium sized; and pen blade grinders, short, thick-set fellows. All these grinders run their stones "wet," and are, consequently, strong and healthy, with a superabundance of animal spirit and much mother wit. Fork grinders, on the other hand, run their stones "dry," and the dust given off in consequence renders them liable to pulmonary complaints. It is easy to understand how, under such a system, work is well done, as the workman is born with those qualities of mind and body necessary to ensure it. But it is a mechanical process nevertheless, and it is quite possible that the firm alluded to may have found it difficult to induce a sufficient number of men to come out of the rut and take to an entirely different class of work.

It is a problem which only some can solve as to whether the late long-continued depression in the silver trade has had any effect in lessening the number of first-class artisans which existed at its commencement. These men were never as plentiful as blackberries, and could always get their price. But the cheap goods in vogue of late years have presented no scope for chasers and engravers of the highest order. Smart workmen who can make up a tea service or a cruet frame and leave clean joints are fortunately always with us, but the men I am now speaking of are a different class from these, and are as near akin to the Benvenuto Cellinis of the middle ages, as the exigencies of our modern order of things will permit of. They used to be a Bohemian sort of fellows, spending their evenings at the School of Art, and smoking no end of tobacco. Among the manufacturers they were much in demand for racing plate, presentation cups, tankards, and so forth. Of late years I have not seen much of their work in the shop windows where football challenge cups are exhibited, which you may take as a mild way of stating a very lamentable fact.

This reminds me of a scene of which I was witness some years ago in a silversmith's warehouse. I use the term "silversmith" here in a conventional sense, because in reality all the work produced in this particular factory was made of a brassy-looking metal called by courtesy German silver. The proprietor, a very good man, who has long since gone to his rest, was a regular screw, but, of course, left all that sort of thing to his manager. On this particular morning an "out-worker" produced from his green baize bag a small cup elaborately chased. Although only a small boy at the time, I was much struck by the incongruity of such a cup in such a place. The manager's face beamed with pleasure as he turned the cup round and round contemplating men and horses and hounds—for it was a hunting scene. At last he asked the price. "Oh!" said the man, "I could'nt take less than the price you named—twenty-four shillings." The manager's face fell. "Twenty-four shillings," said he, utterly aghast, "Why man, the cup altogether is only to cost twenty-four shillings, and here you are charging that amount for only chasing it." Then followed a row, in the course of which, bit by bit, the explanation of the whole matter came out. The written order to the manager to get up a cup which was to cost no more than twenty-four shillings was inadvertently put into the cup after it was made and passed on to the chaser, who naturally took it for an order to himself.

A good test of the state of trade is the promptitude or otherwise with which the gates of a factory are opened after a holiday. Of late years when the engine stopped for the Christmas holidays no man knew for certain when it would be re-started. Anything was good enough for an excuse to postpone the re-opening of the works. First it was stock-taking, then some trifling repairs to machinery or the premises in general; but the real reason locked up in the breast of the manufacturer was simply lack of orders. This year has opened with a great improvement. We certainly could not manage in Sheffield without our week's holiday at Christmas time, but beyond that not much time has been lost. Tradesmen of all kinds are feeling the benefit of the increased spending capacity of the wage earning classes. We may therefore hope that before long the howling wilderness created in the centre of the town some years ago by the demolitions on account of the street improvement scheme, will be covered with buildings. A start has already been made in this direction on the more central sites, but the passer by in New Pinstone Street still looks across the waste land into Norfolk Street, where, however, the busy workshops and glittering show-rooms of Messrs. Mappin and Webb, and of Messrs. Richardson are some compensation for the lack of architectural features nearer at hand.

Happening to be in a silver smelter's office the other day, my attention was attracted by a show-card which hung upon the wall and which seemed to possess features sufficiently novel to deserve mention in these notes. A cursory glance only took in the fact that the card was divided into small squares with a number in each—looking for all the world like an arithmetical puzzle. But a closer examination disclosed an elaborate calculation of great practical utility to silversmiths. The figures on the top row denoted the diameter in inches of discs of silver, and the figures down one side the gauge of the metal, while the figures in the centre the resultant weight. Thus, if a manager got an order for a silver teapot of a certain weight and capacity, he, knowing the superficial measurement of silver required to make such a teapot, would only have to cast his eye down a column of the table and he would see at a glance to what gauge the metal would have to be rolled to achieve the weight required. Messrs. Turner and Co., of Eyre Street, the compilers of the table, deserve the thanks of all practical silversmiths for an expedient calculated to save both time and waste of metal.

Since the first paragraph of these notes was written the Sheffield newspapers have devoted columns daily of their space to the discussion of the Hall-marking controversy. The principal manufacturers have been interviewed and circulars containing questions on the subject sent out to all, in order to elicit their views on the point at issue. The net result has been simply to corroborate the opinions expressed in these notes last month, and so need not be further alluded to here. It is satisfactory, however, to find that the trade is at last aroused and that it is not now likely to allow judgment to go by default.

Midland Jottings.

By J. W. Robertson-Scott.

Mr. Louis Platnauer's patent for watch-fasteners, that I spoke of last month, is making progress.

As to the watch trade, one leading manufacturer says he is fairly busy, and that business is decidedly improving. This applies both to January and to the end of the year. Altogether, he has nothing to complain of.

Mr. Ehrhardt has more work on hand than he can get through, and even talks of enlarging his premises.

This Prescot raising of the price of watch movements a shilling each, is filling the air with threats and counter-threats, but I am afraid there is not much in them.

One hears of the Coventry manufacturers—the Birmingham folk are of course unaffected by the Prescot action—retaliating by combining and forming a watch movement manufactory in the ribbon town. So much being accomplished, the Prescot makers are going to get the best machinery that is to be had, set up watch manufacturing *in toto* themselves, and simply pulverise the watch trade of Coventry.

All that has been done as yet, however, under this programme, is the asking and obtaining the shilling rise, on the part of the Prescot movement makers.

Here is one opinion upon the state of affairs:—The upshot will be that the English watch trade will be evolutionised for the benefit of the English watch industry. Up to the present time, the English watch makers have been working on the old lines. With this new opposition in their midst, they will have to be up and go forward with the rest of the world. Thereby trade will be improved, the manufacturers reducing prices owing to the use of more machine labour than has hitherto been employed. If we are to compete with the Waltham and the Waterbury people, we must have their tools and machinery, and we can manufacture cheaper here than in America.

One result of such a changed condition of things, my informant proceeded, would be that watches would be turned out properly timed, which is now a great difficulty. It can easily be overcome, however, by method, but English makers are very conservative.

What is to be the result of the rise in the price of movements? I was chatting with a man who could talk glibly of the state of things 20 and 30 years back. He says, "The price will be obtained for a twelvemonth, and that the Coventry makers won't do anything before Christmas at least."

Bad as things are, the watchmakers affected are far too conservative to go in for innovations until matters are a great deal worse.

"And even if they did," one of the leading manufacturers in Birmingham said to me, "Machinery isn't everything, even when it's bought. Men accustomed to it, and men to work it, and time to work it in, are equally necessities."

The big houses in the trade that make their own movements, can, of course, afford to snap their fingers at whatever the Prescot men like to do.

A manufacturer who is thus self-contained, remarked to me sententiously, "Why don't the Coventry people pay the shilling without grumbling, and charge a shilling more for their watches? Prices are far too low. I have just told my traveller not to book any cheap orders."

The condition of the employées in the trade is really pitiful in many cases; an old trader said to me, "Why! some of the men havn't a decent coat to their backs. I've just seen a man to whom I should like to give a pair of trousers. What with holidays, and waiting for work, and small pay, some of these fellows are having a real hard time of it and no mistake."

"Years since," continued my gossip, "I used to be proud of the watch trade, and always used to say, and believed, that a man could be in no better trade. I used to say that one could be proud of a good watch. It's certain I can't say this now. Here one has, to be sure, watches at 4s. 6d. and 5s. 9d., and wonders they are, no one will admit more than I do—but what do the poor devils get who make them?"

As to the silversmiths and their happenings, I might, I suppose, write a paragraph or two, but the brief reply of one of the leading manufacturers to my enquiries is sufficiently eloquent, "Things are about as bad as they can be; what with the little fellows, and the appro. work, and one thing and another, but there—"

As far as January is concerned, a better class of stock seems to have been sold by the jewellery manufacturers. There appears to be an opening demand in the direction of better goods, which is surely a sign of healthy trade. Country customers of the manufacturers have certainly been complaining, but in spite of this, the statement that there is an opening demand seems to be justified.

One house out of Birmingham told a gentleman to whom I was speaking, that they did all their December trade within three days.

The Jewellers' Association Annual Meeting is coming on later than was anticipated, and it will be impossible, therefore, to give any report of it this month. There is going to be a dinner, the tables at which have been fully filled up at the moment of writing. Among the guests there are expected Mr. Joseph Chamberlain, and among local M.P.'s, Mr. Powell Williams.

The event of the month, from a jewellery point of view, has, of course, been the presentation of some very beautiful things to the newly-married Mr. and Mrs. Chamberlain, a full account of which will be found on another page.

As to the address, the work of Messrs. T. and J. Bragg, it is a wonderful production. As Mr. J. W. Tonks was one of the secretaries of the committee and T. and J. Bragg rolled into one, and Mr. Chamberlain is the Member for the jewellers' "Quarter," it is quite certain that all the forces of 57, Vittoria Street, were concentrated upon doing credit to the establishment.

I suspect that Mr. Tonks himself had a good deal to do with the designing of the Triptych. It is similar to the famous Rubens Triptych in Antwerp cathedral altar-piece, and its chaste yet rich gold and silver work and enamelling form a *tout ensemble* which make the address one of the prettiest and most thoroughly artistic that I remember to have had the pleasure of seeing.

The decorative illustrative work is most comprehensive, yet presents an entirely pleasing result to the eye. It would be difficult to say what the details of the elaborate design do not include. Writing from memory, there are Mr. and Mrs. Chamberlain's monograms, Mr. Chamberlain's crest, the political bridegroom's public life represented by emblems of the legislator, the deputy of justice, the man of education, a true lovers' knot about the lady's monogram, the torch of Hymen and other suitable devices, and two nicely executed little pictures of a fleet of fishing boats and a very classical dolphin in the fullest enjoyment of life. A more creditable "address" can scarcely have issued from Messrs. Braggs' house.

I was present at the successful Town Hall ceremony, at which the presentations were made. The gifts pleased Mr. and Mrs. Chamberlain and those assembled, as much as they have interested the admiring visitors to the Art Gallery, where they are on view.

Since last writing, the Birmingham Assay Office has published public apologies from four other jewellers, who have been mulcted in £50 and costs for selling unmarked 9-carat gold wedding rings. Three of the offenders reside in Bristol and one in Durham.

On dit that one at least of the nonconformist tradesmen is going to appeal somewhere or other, before sending in his £50 and the little extras representing the guardians' expenses.

The next "case" obtained by the Assay Office will be fought. £50 odd is too much for a shopkeeper to lose now-a-days.

News from Sydney gives some particulars of a parachute descent lately made by a Mr. J. Williams, a watchmaker and jeweller, late of Birmingham, where he was well-known amongst jewellers twelve years since.

The descent seems to have been extremely successful. The balloon shot up more than 6,000 feet, and the parachute after falling like a shot for 100 or 150 feet, dropped slowly and gracefully with its living load to the earth. Ten minutes was occupied in the downward journey. The parachute weighed 40lbs., and Mr. Williams 8st. 4lbs.

I think I might write down here a short account of a little chat I had with Mr. Tonks a few days since. I was talking about the first days of the jewellery trade in Birmingham, when Mr. Tonks remarked that he had the early history of the industry in a box that he would send for.

I do not know what I expected to find in the mysterious box when it was fetched. Mr. Tonks is decidedly "literary" in his private tastes—it is not generally known that he once wrote a novel and, what is much more extraordinary, made £25 out of it—and it occurred to me as just possible that the Hon. Sec. of the Jewellers' Association had, in the course of his "learned leisure," prepared a voluminous M.S. history of the trade in which he is so genuinely interested; had got together no end of dusty excerpts and frowsy affidavits on disputed points, in order to back up his work's trustworthiness when it should be published. But the box contained, I found, no papers at all.

It was about ten inches long by eight high, and was full to the lid almost with stones of all sorts, representing the early work of T. P. Bragg, jeweller, who founded the present Vittoria Street house about the beginning of the century. The contents of the box form a wonderful collection, and by their variety, they remind one of the rare collection of Mr. W. Bragg's that forms a feature in the Birmingham Art Gallery Museum. There were fine pieces of onyx, jade, vegetable ivory, jasper and soapstone, moss agate, cornelian, malachite, carved into all sorts of forms—the gay waistcoat buttons of the beaux of the period, shoe buckles, centres for hair bracelets, pieces for necklaces, bracelets, and brooches, long earring drops, &c., &c., all long since out of fashion. Many of the bracelet and necklace pieces were of course bored for elastic. The box contents are now, apart from their intrinsic value, only interesting curiosities. The day of stone jewellery is past.

And the Braggs themselves have done a great deal, as everyone knows, to bring into fashion gold jewellery in all its more artistic forms. The time was when the quality of a piece of work was widely reckoned simply by its bulk. Mr. T. P. Bragg, before he handed over his business in 1844 to his sons, Thomas and John Bragg, had himself continuously strived after a higher class of work, and the new firm carried on the business in the spirit of its founder.

Specimens of a kind of goldsmiths' work began to issue from Birmingham that surprised many. To energy and enterprise were added the artistic spirit, and in place of the dreadful tube decorations, various pretty symmetrical and tasteful shapes appeared. In the revival of enamelling also, the firm took such a prominent part that "Bragg's" became almost a trade phrase signifying an enamelled article.

Mr. Tonks' efforts began to tell upon the work of the well-known house in 1866. In 1877 he became a partner with Mr. Thomas Bragg on his brother's death. When Mr. Thomas Bragg died in 1879, Mr. Tonks became T. and J. Bragg, as a previous paragraph has suggested. He had drawn and modelled for ten years for Elkington's, and had done good work at the local School of Art. Mr. Tonks, among his other accomplished work, was responsible for the revolution in the treatment of mayoral chains, which, for the old style which combined a series of unmeaning links, substituted a series of ornaments representing the historical record of the town for which the chains were made. In gold and silver keys "T. and J. Bragg" has also given rein to his taste with notorious results.

How things have changed, as far as the organisation of the trade is concerned, since Mr. T. P. Bragg had his humble establishment in Northwood Street! In his time, two leading factors used to come down from London to him at certain times of the year and were accustomed to practically clear out his stock. There were interim orders, of course, also. Mr. Bragg was in the habit, I understand, of keeping his stock in two sections for these two gentlemen's convenience.

Other times, other manners. Now instead of factors coming down from London, the manufacturers have travellers who, when a man is known to be buying, swoop down upon the quarry, besetting him by the dozen, if not by the score.

In the early days, Derby was the home of the crystal trade, and Birmingham seems to have largely succeeded to it.

Mr. B. H. Joseph, of Frederick Street, in a letter to one of the Birmingham dailies, on compulsory hall-marking says:—"When compulsory hall-marking is abolished, the public, knowing that inferior articles not marked may be put off upon them, will demand goods that bear a guarantee of their quality, and it will be in the interest of the manufacturer to supply the demand. But I do not apprehend that this country will be flooded with inferior silver from other countries any more than it is now. What manufacturers complain of is, that under the present compulsory system, they are prevented making silver goods of less than English sterling quality, and are thereby shut out from competing in other countries where neither our quality nor our marks are needed; and the sooner this system is abolished the better it will be for the manufacturing silversmiths of Birmingham."

Foreign Parcel Post Compensation.—An official notice issued last month, states that in future the Postmaster-General will (not in consequence of any legal liability, but voluntarily, and as an act of grace) give compensation for the loss and damage of parcels sent by parcel post between the United Kingdom and foreign countries; but the compensation is limited to 12s. for parcels to most countries in Europe, except Belgium, the Netherlands, and Norway, for which countries, as well as for the Congo Free State, Costa Rica, Egypt, &c., 20s. compensation will be paid. In order to get compensation a certificate of posting should be obtained from the officer receiving the parcel. This certificate must be filled up by the sender, and then signed and stamped by the officer of the Post Office receiving the parcel. General directions are given as to the conditions and manner of making claims for compensation.

The Prescot Watch Trade.

ON the 9th ult., a meeting of masters and men of the Prescot movement trade was held in the Assembly Room, Derby Street, in order to exchange ideas as to the efficacy or otherwise of the formation of the Lancashire Watch Manufacturing Company, so far as it related to both the masters' association and the workpeople's association. Notwithstanding the fact that the meeting had been called at very short notice, there was a very large attendance. The chair was occupied by Mr. J. Johnson Brown, and amongst those present were Messrs. W. Tyrer, T. P. Hewitt, J. Hewitt, J. Berry, W. Beesley. S. H. Hartley, T. Dennett, R. Greenall, J. Beesley, W. Jackson, J. Case, W. Ashcroft, J. Robinson (secretary of the Watchmakers' Trade Association), T. Brown, T. Evans, J. Hunter, J. Jones, W. Robinson, J. Mutch, H. Rowson, J. Welsby, W. Brown, R. Mercer, W. Mercer, W. Starkie, T. Dempsey, John Case, J. Pratt, H. Dagnall, Isaac Case, G. Brownbill, G. Naylor, T. Taylor, T. Coffey, J. Prescott, J. Beesley, E. Range, J. Atherton, E. Crawley, &c.

The Chairman, in opening the proceedings, said that the meeting had been called in order that the employers in the watch trade, as well as the employed, should exchange their ideas for for their mutual advantage. They would hear what Mr. T. P. Hewitt, the managing director of the new company and others belonging to the town had to say on the subject. The movement promised to be a great success, and, no doubt, there were difficulties to be faced, but they mustall resolve to work with determination and confidence, and, if great benefit did not directly accrue, their successors, at least,would reap the advantage. If the movement was only properlycarried out, he was sure great success to Prescot would follow.

Mr. T. P. Hewitt, who was warmly received, said he had had the pleasure of addressing them on other occasions, and he had much pleasure in addressing them upon that. They had to understand each other, so that they might work together in harmony. In the new undertaking there were a good many interests that were involved. The Lancashire Watch Company had absorbed all the old masters. The first thing that might strike the workmen in that matter was that they would only have one master in the future, and he did not know whether that was not an important question for them to consider. The probability was that if they had only one master, perhaps, he might be tyrannical and oppressive. In fact, they might say that all governments by one man were tyrannical, but they were fortunate in that case that the company was a co-operative body. They had gentlemen who composed that company, who had not only the success of the company to think about, but the success of the town, and he thought the gentlemen who formed the directorate of the company would have regard to that. They had first considered, without any asking from them, the prices that had been paid up to the present, and they had determined that these prices were too small, and they had determined that these prices should be raised. They would immediately start on an advanced scale of wages. He did not want them to go away with the idea that they would not have to work for it. If that company gave them advanced prices, they would have to do their work well. He believed the low prices had had an injurious effect on their trade; they had compelled men to scamp their work in order to get money to live by, and they had determined, as workmen, they must get back to the old standard of work in Prescot. With regard to the masters it is a very important matter for them on their side. It was a great change for the masters, but they considered it would be impossible to arrive at an advance of prices, or carry forward the trade as they thought it should be, without some sacrifice on their part, and as a matter of fact they had sacrificed something. One firm would be able to employ and to sell goods, and they would in that way drive out this competition, which had been under competition. As a solution of the question, one firm—the Lancashire Watch Company—would be able to employ all the workmen, and in that way they would be able to drive out all competition—competition that had been disastrous, and, in a great many cases, necessitous, the men not being able to choose for themselves. It had come to his knowledge that one of the masters had undertaken to supply 1,000 three-quarter-plate keyless movements at half-a-crown each. Now, it was known that such a thing could not be done for anything like wages. This contract, which had been entered into from sheer necessity, only left a margin of one penny on each movement. When the trade got to such a position as that it was high time to do something to alter it. The next thing that occurred to him was that customers would have something to say in the matter. The first experience would very likely be one of determination to counteract them, and customers might say that they had bought movements at this and that price, and he believed there were several propositions before the customers who had been used to take their supply for them to supply themselves. Now, he (the speaker) was persuaded that they would come to the conclusion that movements could not be made for the prices that had been paid before. It was not a question of supply and demand altogether; the people who bought from them had no idea when they bought cheap watches that they were worthless. Where they had not had competition they had had increased trade and better times. Now they came to another position. They had to ask themselves, did they make these improvements in the best form? were they fitted to make these movements with all the machinery which was adequate to the proper making of movements? They admitted that they were not, and they said in order to get that machinery they must get the money. It was impossible to take money from people, if they did not give them a return for the capital that was in. They took this step on this ground, and this ground only, that they must make the present trade pay the workmen, and men who put their money in it. If they did that they could say to the people they had made it pay, and if they got new machinery they would increase the trade immensely and be able to make it pay also. There was one remark he should like to make and that was that they should not look on capital and labour as antagonistic. These interests were closely allied. When they got the money they wanted, they must all work to make that money pay, and if they did that, they would increase the trade wonderfully. In America, the money paid was far beyond what was paid here, and the money returned was far greater, and all this had been done whilst they had been sitting still, and when they had come to that position it was the better plan to get away from it. If this embodied some sacrifices on their part, they must not go and let the present govern them for the future. They must make sacrifices at present for the good of the future. They must stand up firm together; it was a question for Prescot, and he hoped after they had fixed the prices for them all round, they must be determined they would not give their work to any one else who would give them a less price. They must not fight themselves. There was no determination on the company's part, to exact anything but a fair price. They would only work for the company as men who would work at the same prices, and if they saw a man underselling the company, then he asked them not to work for them. If they did not hang together they would hang singly. If that was the spirit in which they worked then they were right. He urged the young men in the trade to get a knowledge of mechanics. The impression about machinery ruining the trade was a false one. They must have the machinery, and instead of making twelve gross of movements per week in Prescot, they would be able to make that number per day, and that would employ more labour, and, he hoped, increase the prospects of Prescot.

Mr. Dennett said that he was asked to join the company by Mr. Hewitt and others interested in it, who said they wanted to improve the condition of the workmen. If they (the workmen) joined themselves with the masters or employers it would be for their own good. As far as he was concerned, if it had been a movement against the workmen, he would have had nothing to do with it. He only hoped the company would do well for the men and the town.

Mr. James Berry said he had much pleasure in meeting them, because he believed that was a starting point in their trade. which would open up a new era. He hoped it would be the means of bringing many blessings to them and their families, and by perseverance and good management they would be able to show those people who invested their money in the new company, they had not made a mistake, and that in the first instance they would be able to give them a good dividend. It appeared to him that the year 1889 had produced very great changes in the town of Prescot; it had swept away the whole of the movement makers who had employed them for a number of years. He might say that he represented what was admitted the oldest movement house in the trade, Hunt & Co. He had felt the change in having that old name swept away, and he had become something like a servant. He was sure there was a desire on the employers' part to do all and everything they possibly could to give the workmen full employment, and he had no doubt that with a long pull, a strong pull, and a pull altogether, they would be able to say at the end of the year, the movement started at the beginning of the year, in the formation of the Lancashire Watch Company, was and had been a benefit.

Mr. W. Beesley did not think he was second to anyone in wishing that movement success. He believed they were all most anxious as to what price they were going to get. He did not think that was the proper place to state that, and arrangements would be made with them in due course. The list for each class of work would be published in the respective workshops. In Coventry there appeared to be intense feeling in the matter, and one manufacturer there speaking to him upon the company, described it as a ring, a corner, a monopoly, a syndicate, and everything that was immoral. He told that gentleman that if they had reduced the price list, he would have said they had done right. He informed him also that it so happened they had put the price of movements up a shilling.

Mr. Jas. Hewett said that he was very much interested in the concern, and he would like to see it go forward. In Coventry there was intense feeling against the company, but if the Coventry people had seen the distress caused in Prescot, they would not have forced the prices upon them that they had done.

Mr. R. Greenall thought they were on the right track now, because, as they were all well aware, they had not been earning anything like a reasonable living for themselves and families. He could assure them that the movement manufacturers themselves had been doing worse, and when a man accepted an order just for the cost of the work of a thousand movements, that firm could not stand long without some alteration or improvement. But this had been done to his knowledge. It enabled those who sold that class of movements to undersell the legitimate and proper trade, and for that which paid neither master nor men. They had one end and purpose in view and that was, they wanted to secure benefits for themselves and the men as well. He hoped they would do their work in the best possible manner, and then they would be paid in the same way. It would be to their interest to do their work well. If they would be honest to themselves, to the company, and to the people who purchase their movements, they might depend upon it that movement and company would go on and prosper.

Mr. T. F. Williams said he had studied that question, and he felt satisfied that if the men would only back up the efforts of the masters it would be the very best thing started in Prescot. Not only would it benefit the masters and shareholders but in a greater measure still it would help the men. He thought they would find the discontented people were the people who had been buying their movements at the least possible price, when they had to pay a proper price. He urged them to try and do their best for the next twelve months, and then he had no doubt the company would be a success.

Mr. S. H. Hartley said he did not know what position he occupied. He could scarcely be called a master. He might say, in forming the company, those with whom he had been associated had been careful not to incur any expense in forming the company, nor were they paying fees in the shape of promotion money. They knew that new companies were very often watered very heavily in this manner, but they hoped to pay a dividend at first, in addition to paying workmen reasonable wages. The company said they must pay the men a better price than they had hitherto done. The next thing they considered was what would be a fair percentage for the capitalists' outlay, and he might say these two objects were running together in the minds of the directors. He was surprised to hear the other day of a man working 90 hours for 17s., and heard also of one employer paying three men with families with a sovereign. Was that a condition of things that should exist? If they get hold of the same end of the rope, and pull together, there would be no difficulty whatever. The company would take care to sell the goods if they would only make them good enough for them. In conclusion, he trusted that the year 1889 would be the best they ever spent in Prescot.

Mr. Tyrer said that the very first object of the promoters of the company was the increase in the wages of the men. Various meetings had been held at his office, and as soon as matters got into shape the question of wages was considered, and it was then decided that the various branches that had been very much underpaid should be increased. If the workmen only acted with the company, and did their best for the company, the company would do their best for them. He hoped they would all stick to Prescot.

Mr. Ashcroft said that he had a reply to make on behalf of the men, and he thought when he spoke he had their confidence. The masters had told them what their objects were in forming that company, and what induced them to form it—the improvement of the trade of Prescot, and the improvement of the condition of the workingmen of Prescot. Up to that meeting, the workingmen were not aware of the masters' intentions, or what they intended to do. Consequently, they thought until these gentlemen told them they had nothing to say. He was pleased to say a few words with reference to another association which the workingmen of that town had formed for themselves. They had thought it desirable to form themselves into an association. Some few weeks ago, they were startled on learning of the announcement that a company had been formed, called the "Lancashire Watch Company," and this caused them alarm to say the least of it. The men asked what it meant, and so a few put their heads together and asked what was their position, had they not a right to consider their position? The result was a committee was formed, and the committee was authorised to draw up rules with the view of forming a workingmen's association. These rules were presented at a general meeting of watchmakers on the last day of last year. That meeting was a credit to the town, and all turned up like men. The rules were approved, and it was decided that they should be registered, and that the association should be put on a sound basis. No less than 90 enrolled their names as members. That association was not antagonistic to the masters, and they did not endeavour to lay down any unjust or undue demands. All that the association required was that the masters should treat the men fairly, honestly and uprightly, giving a fair day's wage for a fair day's work. In return the men had decided to uphold the standard prices, and encourage them to develop the watchmaking industry in that town, and also to work hand-in-hand and shoulder to shoulder with the masters. The other objects of the association were the improvement and development of the watch trade, and not to make any unjust or undue demands. The men would be fair and honest to the masters, and help them over the difficulty hanging over the town at the present time. He was glad the masters had interested themselves in the manner in which they had done that night. He was sure they would all go away happier than when they entered the room.

Mr. Jas. Jackson then proposed "Success to the Lancashire Watch Association."

Mr. Jas. Case seconded the motion, which was adopted.

Mr. T. P. Hewitt, in reply, thanked the workmen for the vote they had passed, and remarked that he was glad they were all of one mind in the matter. He in return proposed "Success to the Watch Movement Makers' Association."

Mr. Hartley seconded the motion, which was also carried.

Mr. Wm. Sephton returned thanks on behalf of the association.

A vote of thanks was then passed to the Chairman, and the proceedings terminated.

Presentation of Jewellery to Mrs. Chamberlain by the Citizens of Birmingham.

THIS has been the great event of the month of January in the Birmingham jewellery trade, and considerable satisfaction has been felt that the presentation has taken this form. Jewelleryhas always been regarded as a most appropriate and desirable form in which to convey the good wishes of friends to the bride, and when the occasion is made a public one, and the bridegroom is a representative of a certain division of a borough or city, it is certainly a most happy coincidence that that particular division should mostly consist of jewellers. The presentation is composed as follows :—A pearl necklace presented by the citizens of Birmingham ; a diamond star and illuminated address presented by the Women's Unionist Association ; and the constituents of West Birmingham give a coloured gold suite of bracelets, brooch and necklet—an example of the goldsmiths' craft. The gifts are of a rich and elegant character; the total amount subscribed being about £700. Of this amount the pearl necklet takes £400; it consists of a single row of very fine oriental pearls, 73 in number, graduating in weight from three grains to ten dwts., strung upon fine silk, and with a single diamond clasp of one carat in weight, enclosed in a case of chocolate velvet lined with pale blue.

The diamond star is a brilliant six pointed one, containing 55 diamonds set in silver with gold back, and is arranged so as to be worn as either brooch or hairpin ; the centre diamond weighs one-and-a-quarter carats and there is a similar stone between each point of the star in a cut-down setting supported by knife-edge gold wire from the angle between the points. This is a very fine specimen of diamond mounting : it is cased in chocolate velvet throughout and the case bears the monogram M. E. C. in saw-pierced silver : the cost of this, complete with case, is about £160. Both this and the pearl necklet were entrusted to Messrs. W. Spencer & Sons, 33, Regent Place, Birmingham, and form a very creditable and beautiful specimen of the ability and resources of the firm.

The gift of Mr. Chamberlain's constituents takes the form of a colored gold suite in the Etruscan style and is a very worthy example of what Birmingham designers and goldsmiths can produce, and goes a long way to dispel any reproach that may have been attached to Birmingham jewellery in the past ; to form a really good opinion of these pieces of work requires a practical eye, and then the beautiful intricacy of the design can be fully seen and appreciated. The necklet consists of a series of floral rosettes connected by festoons, between which are suspended ball-drops ; the whole is composed of the finest wire-work scrolls laid on to wrought foundations and aided by a very artistic arrangement of small shots ; the rosettes and festoons are linked together so that the necklet is perfectly flexible, and the whole does great credit to both designer and workman ; this is the production of Messrs. C. Payton & Sons, Vyse Street, Birmingham.

The bracelets and brooch are excellent companions to the necklet ; they are in the same style of ornament, and are well worth a close examination ; the really beautiful filigree work with which they are decorated is well worth the study of some of our young workmen. The centre of the bracelet consists of an artistic tablet or circular panel with the monogram "M. E. C." in raised gold ; around this is a rich border of Etruscan wire work which is carried artistically on to the shoulders of the band in the form of a shield with graceful surroundings. The brooch, which is of the fischu or long shape, now so fashionable, repeats to a certain extent the decoration of the bracelets. These beautiful specimens of the goldsmith's art are the productions of Mr. Joseph Wainwright, of 164, Warstone Lane, Birmingham ; they were designed by and carried out under the supervision of Mr. T. Wigley, the practical designer and manager of the firm, and do great credit to all concerned therein.

The address from the ladies which accompanies the diamond star is the work of Mr. E. Morton, Bennet's Hill, Birmingham, and like all his work is most chaste and delicate, both in drawing and colouring. The most important and costly one is the address from the constituents of West Birmingham ; it is enclosed in a Triptych of wrought silver, partaking of the form of the Rubens Triptych in Antwerp Cathedral ; the two side panels open and display the illuminated address in the centre panel ; the arch over this bears Mr. Chamberlain's crest and motto, "Je Tiens Ferme," and the arms of England and America, typical of the recent union. This is enriched by a conventional arrangement of orange blossoms, English rose and oak leaves. The arches of the side panels support the British Lion and the American Eagle respectively, with the monograms of Mr. and Mrs. Chamberlain, and various emblems typical of the statesman ; and in addition to these, the true lovers' knot, torch of Hymen, Cupid's bow, &c. ; also in each side arch is a fine specimen of enamelled work, that under Mr. Chamberlain's monogram being a picture of the Birmingham Council House, the other a representation of the Capitol of Washington. The arches are supported by graceful columns, and the double one in the centre is decorated with the arms of Birmingham and the motto, "Forward," and these, with a city coronet, compose the fastener or clasp. The illuminated address in the centre is the work of Mr. N. J. Bates, and the silversmiths' work is by Messrs. T. and J. Bragg, Vittoria Street, and is another specimen of their specialities in this line, for which they are justly famous.

The whole forms a lovely memento of the event, and combines most appropriately as a representative sample of the higher branches of the jeweller's art. The presents have been on view for some time at the Birmingham Art Gallery, and are always surrounded by a numerous circle of on-lookers, some admiring that wonderful circle of pearls in their quiet beauty, while others are attracted by the glitter and sparkle of the diamonds, and all by the design and fine workmanship of the gold Etruscan work. There is no class of jewellery that is more fashionable now for morning wear by ladies of cultivated taste. It gives opportunity for the display of artistic powers far more than the mere clustering together of valuable gems, which, however lovely they may be, are in no sense works of art except in the few instances where they are combined with workmanship of gold such as was common in the finest class of mediæval work. But this same fine mediæval and Etruscan work can now be equalled by our best Birmingham workmen, and is to a degree equalled in the choicest articles turned out by the best houses in the trade. Such a fact is encouraging as giving evidence of a love of pure, as contrasted with simply costly ornament, and as giving hope for the better employment of the large and increasing number of able workmen capable of undertaking it.

Death of a Celebrated American Watchmaker.

A WALTHAM dispatch announces the death of Mr. C. Van Der Woerd, of the Waltham Watch Tool Company, which occurred on December 30, at Hackett, California, while he was in the cars en route from Los Angeles to San Francisco. Referring with regret to the occurrence, the New York *Jewelers' Weekly* gives the following short account of some of his work.

Carl Van Der Woerd, one of the greatest inventors of watch machinery, and who has done much to make the American watchmaking industry a fact, was born in Leyden, Holland. He was at the time of his death about 70 years of age. He came to this country at an early age and entered the employ of the Nashua Watch Company. He came to Waltham with the business of that company when it was consolidated with the American company, and was for several years the superintendent of the Nashua department. Later he was superintendent of the American Waltham Watch Company's factory, and during his service invented the wonderful watch tools that made his name famous.

About two years ago he severed his connection with the American company and started the Waltham Watch Tool Company; later this was merged into the United States Watch Company, and Mr. Woerd was the superintendent of the United States' factory.

Talented in most things, he was a genius in invention, and the wonderful screw machine that is the child of his brain is a grand monument to his genius. He would have been a great inventor even had he not conceived the screw machine, and scarcely a process in the American Waltham Watch Company's factory but has been improved by his skilful hand and brain.

Failing health of late years caused Mr. Woerd to go to California to recuperate. He leaves a widow, two sons and two daughters.

The Coventry Watch Trade.

In reference to the Lancashire combination, the *Coventry Herald* says:—The syndicate in the watch movement trade has had the result of bringing about a combination of local watch manufacturers to supply movements to themselves and other manufacturers. A series of meetings to consider certain proposals culminated in a large gathering that was animated by a very sanguine spirit. The first resolution was unanimously carried, "That in the opinion of this meeting the time has arrived when watch movements should be made in Coventry." It was further unanimously resolved, "That this meeting pledges itself to take up a certain amount of shares, and to use every endeavour to give every assistance in the formation of a company." The next resolution was, "That the affairs of the company be placed in the hands of Mr. Masser (Messrs. Hughes & Masser), solicitor to the Watch Trade Association, who would advise as to the steps to be taken in legally forming a company under the limited liability clauses of the Companies' Act." An influential committee was appointed to carry the resolution into effect. It may be added that the promoters have a definite scheme of operations before them.

The *Coventry Times* says:—It would seem that the principal outcome of the Prescot watch movement syndicate will be the establishment of a new industry in Coventry. If this should follow, the syndicate, instead of being a curse, may prove a blessing, though undoubtedly it has made its appearance in disguise. The manufacturers of this city have resolved to combine for the purpose of protection, and the making of movements will soon be carried on here by a company. It is something of a mystery why Coventry has been content to so long depend for its movements on outside manufacturers. It might have been imagined that it would be a great benefit to localise the industry as much as possible, and there are not wanting signs that the present situation may further develop into the origination of a company in the city for the manufacture of a perfect watch. Meanwhile the Prescot syndicate is setting itself to work. We hear that it has secured the business of a large manufacturer of movements, and that its operations will speedily be extended as much as possible, but the counter stroke at Coventry is likely to prove a severe blow to the prime movers in the matter.

A reliable correspondent, whose letter we cannot insert in full, informs us that "within the next fortnight a good English watch movement at the reasonable price, will be in the market, that may compare favourably with the Prescot-made movement." We give this information simply as an item of news.

The Duty on Silver Plate and the Goldsmiths' Company.—A statement has been widely circulated in the Press to the effect that the Goldsmiths' Company has appointed a committee to consider the questions of the plate duties and compulsory hall-marking and to co-operate with the government in settling details. We have it on the best authority that the statement in question is entirely without foundation, and is, in fact, a pure fiction, no such committee having been appointed.

Birmingham Jewellers' and Silversmiths' Association.

The annual meeting of this association was held at the Assay Office, Newhall Street, Birmingham, on the 24th ult. Councillor C. Green presided, and there were also present Messrs. B. H. Joseph, J. W. Tonks (hon. sec.), W. J. Ginder, Allen Edwards (sec.), C. H. Pare, M. Nathan, J. Spiers, F. Nathan, Wilmot, F. Banks, A. G. McKewan, A. Sydenham, Loach, Demaux, J. F. Goode, C. Rowbotham, G. Sydenham, H. Payton, Pendleton, Councillor Jacobs, Edmunds, H. W. Hyde, H. R. Wright, A. J. Jenner, J. H. Mole, Scattergood, B. J. Round, Wilcox, H. David, Patterson, W. Neal, L. Spiers, &c. The committee in their annual report stated that the present strength of the association is 115, in addition to which 13 candidates offered themselves for election at the present meeting.

With regard to hall-marking with numbers, the committee reported that the matter remained very much as it did on the July 19 last. Since then the cordial relations that existed between the promoters of the London bill and the committee had continued, and joint efforts in furtherance of the movement would be renewed during the coming session. Several members of Parliament had already interested themselves in the matter.

The subject of receivers of stolen metal had received the attention of a special sub-committee for some months past, and on the 14th December last they presented a most exhaustive report to the General Committee. The report was the result of an enormous amount of labour and of close attention on the part of Messrs. J. M. Banks and W. J. Ginder, members of the sub-committee; but the General Committee considered the matter of so much importance that they had carried it forward to be dealt with by the new committee.

The scheme of School of Art classes has now become an accomplished fact, the negotiations between the committee and the authorities of the Municipal School of Art having been brought to a successful issue. The school has now been in existence upwards of four months, and the reports made by the association visitors from time to time have been of an encouraging nature. The number of pupils entered for the first term was 108. The school is open five nights in each week. The average attendance, at first very fair, was reduced by the overtime generally worked before Christmas. The committee hope that employers will help the movement by giving facilities to the pupils to leave in good time, and urging the importance of regular attendance. In addition to the usual prizes offered by the School of Art, the committee have arranged with the School Committee that special prizes for good work shall be offered to the jewellers' and silversmiths' art classes by the association.

The association had interposed in several failures in which the members were concerned, and, they ventured to say, greatly to the advantage of the general body of creditors in each case. The invariable rule had been to demand an independent investigation by the association before giving a recommendation to any scheme for composition or private arrangement. In two cases compositions of 10s. in the pound had been obtained, in a third 6s. in the pound, and in a fourth 5s. in the pound, in each case a portion of the composition being secured. In a fifth case the composition offered was 7s. 6d. in the pound, but no security was forthcoming; and there being no prospect of carrying the estate on under inspectorship with success, the debtor executed a deed of assignment for the benefit of his creditors, with four members of the association as a committee of inspection, and the secretary as trustee.

Although the first year's accounts had included all the expenses of the initiation of the association, there was a small balance in its favour at the end of the year.

The members of the committee retiring in accordance with Rule 10 were Messrs. H. Payton, J. H. Mole, A. Sanders, A. Newman, and H. W. Hyde.

The report was adopted on the motion of the Chairman, seconded by Mr. H. Payton, and supported by Councillor Jacobs and Mr. J. W. Tonks.

The following officers were elected for the ensuing year:—Councillor C. Green, chairman; Mr. J. M. Bates, vice-chairman; Mr. W. J. Ginder, treasurer; Mr. J. W. Tonks, hon. sec.; Mr. A. G. McKewan, auditor; and Messrs. B. H. Joseph, H. W. Hyde, J. Wainwright, W. H. Lord, W. Best, H. R. Wright, and W. H. Small to fill vacancies on the committee.

Votes of thanks were passed to the officers for their services, and to the Wardens of the Assay Office for the use of the room.

The Kew Observatory Watch Trials, 1888.

SIX hundred and thirty nine entries of watches for rating were made as contrasted with 510 during the corresponding period of the previous year. They were sent for testing in the following classes:—

For class A, 569; class B, 51; and class C, 19.

Of these 218 failed to gain any certificate; 8 passed in C, 46 in B, 367 in A, and 28 of the latter obtained the highest possible form of certificate, the class A *especially good*.

In Table 1 will be found statements giving the results of trial of the 30 watches which obtained the highest numbers of marks during the year, the premier position being attained—with 89·0 marks—by a keyless, single-roller, going-barrel, centre-seconds watch, submitted by W. Holland, Rock Ferry, Birkenhead.

This total exceeds that of last year, and it is also extremely satisfactory to note that a continued increase has taken place in the proportion of watches gaining more than 80 marks, the number this year being 53.

No difficulty has been experienced in maintaining the three safes—in which the watches are placed during rating—at the three temperatures of 40°, 65°, and 90° respectively, all the year round.

Special attention continues to be given, as before, to the examination of *pocket chronographs*, in accordance with the request of the Cyclists' Union; and in consequence of numerous enquiries from manufacturers, timers, &c., a set of rules has been drawn up, as follows, which are adhered to as far as practicable in testing chronographs.

1. After the usual A or B tests are finished the watch is run with the chronograph work in continual action for one or two periods of 24 hours each, and a note made of the maximum effect produced upon the ordinary daily rate, by the chronograph mechanism being in constant action.

2. This maximum effect must not exceed ± 5 seconds.

3. In addition to the above 24-hour trials, the watch—with a view of testing its starting, stopping, and recording qualifications—is also subjected to shorter tests, varying from a few seconds to an hour or more in duration.

4. When the chronograph mechanism is in action, and pressure is applied to the knob or push-piece, the chronograph hand or hands must either stop dead at once, or else must run on unaffected until stronger force is used.

5. There must be a complete absence of "lagging" and moving only in spasmodic jumps, when pressure is applied, and perfect absence of recoil when the chronograph hand is stopped.

6. The hands must return to, and start exactly from, the zero mark, and in the case of split seconds they must run together in exact accordance.

7. The times shown by the minute-recorder must agree with the position of the fly-back hand.

8. When the chronograph action of a watch has been tested—in addition to the trial of its ordinary time-keeping qualities—an endorsement of the result will be made upon the certificate; and chronograph watches with certificates without this endorsement will be recognised as having been examined as ordinary watches only.

Marine Chronometers.—Certificates of mean daily rate and of variations of rate at each temperature have been awarded to twelve marine chronometers after undergoing the 35 days' trial as specified in the regulations.

TABLE I.

PERFORMANCE OF THE 31 WATCHES WHICH OBTAINED THE HIGHEST NUMBER OF MARKS DURING THE YEAR.

Watch deposited by	Number of watch.	Balance spring, escapement, &c.	Mean daily rate. + Gaining. — Losing.	Mean variation of daily rate. ±	Mean change of rate for 1° F.	Difference of mean daily rate				Difference between extreme gaining and losing rates.	Marks awarded for			Total Marks. 0—100.
						Between pendant up and dial up.	Between pendant up and pendant right.	Between pendant up and pendant left.	Between dial up and dial down.		Daily variation of rate.	Change of rate with change of position.	Temperature compensation.	
			secs.	secs.	secs.	secs.	secs.	secs.	secs.	secs.				
W. Holland, Rock Ferry	3624†	Single overcoil, *s.r., *g.b.	+0·6	0·35	0·02	—1·2	+1·0	+0·5	+0·2	4·0	33·0	37·0	19·0	89·0
H. Golay, London	147106†	Double overcoil, s.r., g.b.	+3·0	0·5	0·002	—0·8	—2·1	—2·6	—1·0	5·25	29·4	36·6	19·8	85·8
Usher & Cole, London	24329†	Single overcoil, s.r., g.b.	+1·5	0·5	0·04	—0·5	—1·6	—2·1	—0·8	4·75	30·7	37·2	17·6	85·5
E. F. Ashley, London	03614†	Single overcoil, s.r., fusec	+0·7	0·4	0·06	+1·0	—1·8	—0·7	—0·8	4·5	32·0	36·8	15·8	84·6
D. Buckney, London	2930	Double overcoil, *d.r., g.b.	+3·3	0·5	0·05	+0·9	+2·0	+0·4	—2·0	5·75	30·8	36·8	16·9	84·5
Baume & Co., London	2706	Single overcoil, d.r., g b.	+0·2	0·5	0·04	—1·3	—1·2	—3·0	+0·3	6·25	29·6	37·3	17·5	84·4
Jos. White, Coventry	31610	Single overcoil, s.r., g.b.	+0·5	0·6	0·02	—0·6	+0·5	—0·6	+0·5	4·5	27·5	38·6	18·3	84·4
Usher & Cole, London	24042†	Single overcoil, s.r., g.b.	+1·0	0·5	0·04	—0·5	—2·3	—2·6	—0·8	5·25	30·4	36·4	17·3	84·1
Stauffer & Co., London	123175	Single overcoil, d.r., g.b., bar-lever	—5·6	0·4	0·05	+2·6	—0·7	—1·5	—2·1	8·0	31·3	35·7	16·8	83·8
Stauffer & Co., London	123162	Single overcoil, d.r., g.b., bar-lever	+5·1	0·5	0·02	—2·8	—4·0	—1·5	+1·5	5·5	29·9	35·3	18·5	83·7
Jos. White, Coventry	31524†	Single overcoil, s.r., g.b.	+1·8	0·5	0·01	+0·7	+1·8	+4·9	+2·8	7·75	30·9	33·6	19·1	83·6
W. Gabriel, London	$\frac{325}{1000}$	Double overcoil, s.r., g.b.	+1·4	0·5	0·07	—1·0	—0·2	—0·1	+0·4	6·5	29·5	38·7	15·3	83·5
A. E. Fridlander, Coventry	52541†	Double overcoil, d.r., fusee	+0·6	0·4	0·04	+0·1	—2·6	—2·3	—2·6	5·0	31·1	35·1	17·1	83·3
Stauffer & Co., London	123179†	Single overcoil, d.r., g.b., bar-lever	—1·1	0·4	0·06	—0·5	—2·5	—3·0	—0·9	6·5	31·2	35·9	16·0	83·1
W. Gabriel, London	$\frac{362}{1000}$	Double overcoil, d.r., fusee	—0·6	0·5	0·05	+0·8	+2·1	+1·9	+2·4	6·75	30·2	36·2	16·7	83·1
A. E. Fridlander, Coventry	52484†	Double overcoil, d.r., g.b.	+3·9	0·4	0·07	+2·3	—0·6	—0·9	—2·8	5·0	31·4	36·3	15·2	82·9
H. Golay, London	147108	Double overcoil, d.r., g.b.	+3·2	0·5	0·02	—3·8	+2·6	—0·1	+2·4	9·0	30·8	33·5	18·5	82·8
W. Holland, Rock Ferry	3614†	Single overcoil, d.r., g.b.	+1·3	0·5	0·04	+1·6	—0·6	—3·3	—1·0	6·0	30·6	34·8	17·3	82·7
Baume & Co., London	2639	Single overcoil, d.r., g.b.	+1·7	0·4	0·03	—0·7	—6·1	—2·3	—3·2	7·75	32·7	32·2	17·8	82·7
W. Holland, Rock Ferry	3578†	Single overcoil, d.r., fusee	+1·6	0·5	0·03	—2·4	+1·5	+2·9	+1·9	7·5	30·5	33·9	18·0	82·4
Usher & Cole, London	25768	Single overcoil, s.r., g.b.	+2·4	0·5	0·03	—2·9	+0·4	+1·1	+1·3	8·25	29·4	34·7	18·0	82·1
Baume & Co., London	3000†	Single overcoil, d.r. g.b., bar-lever	+2·5	0·5	0·03	—1·4	—1·7	+3·2	+1·5	8·75	29·4	34·8	17·8	82·0
H. Golay, London	14782	Double overcoil, d.r., g.b.	+0·1	0·5	0·07	—2·6	—2·9	—1·9	+0·2	7·25	30·1	36·8	15·1	82·0
A. E. Fridlander, Coventry	52568†	Double overcoil, d.r., g.b.	+1·4	0·5	0·05	+1·6	—0·8	+2·3	—1·6	4·75	29·7	35·7	16·5	81·9
Stauffer & Co., London	122290	Single overcoil, d.r., g.b.	+1·9	0·5	0·05	+1·0	—1·2	—3·4	+0·1	7·25	30·8	34·2	16·8	81·8
Baume & Co., London	3002†	Single overcoil, d.r., g.b., bar-lever	+1·7	0·4	0·07	—1·0	—4·6	—4·2	—2·6	6·0	32·9	33·2	15·6	81·7
H. Golay, London	14780	Double overcoil, d.r., g.b.	+1·4	0·6	0·002	—0·7	+0·9	—0·2	+5·3	9·0	27·7	34·1	19·9	81·7
Baume & Co., London	2702	Single overcoil, d.r., g.b.	+1·3	0·7	0·03	+1·7	—0·7	—0·0	—0·9	5·75	20·5	37·1	18·0	81·6
G. Barter, London	14727	Double overcoil, d.r., g.b.	+2·3	0·5	0·06	—0·7	—2·4	—0·9	+2·2	7·0	29·7	36·0	15·8	81·5
D. Keys, London	15889	Single overcoil, d.r., g.b.	+0·2	0·6	0·04	+1·0	+2·2	—0·6	+2·4	6·0	28·8	35·0	17·6	81·4
Usher & Cole, London	25811†	Single overcoil, s.r., g.b.	—0·2	0·4	0·05	+0·7	+4·1	—2·9	+0·2	8·5	31·3	33·6	16·4	81·3

* d.r., double-roller; s.r., single-roller; g.b., going barrel. † Especially good.

Table II.
HIGHEST RECORDS OBTAINED BY COMPLICATED WATCHES DURING THE YEAR.

Description of Watch.	Number.	Deposited by	Marks awarded for			Total marks, 0—100.
			Variation.	Position.	Temperature.	
Minute and seconds chronograph and repeater...	52568	A. E. Fridlander, Coventry ...	29·7	35·7	16·5	81·9*
" " " " ...	14799	H. Golay, London	26·0	30·2	18·5	74·7
" " " " ...	14793	H. Golay, "	23·5	34·2	16·4	74·1
Split-seconds and minute-recorder chronograph .	2773	Baume & Co., London	27·0	33·2	15·7	75·9
" " " .	1070	H. Golay, "	24·0	31·3	16·9	72·2
" " " . .	2500	Baume & Co., "	27·8	31·8	12·5	72·1
Minute and seconds chronograph....................	52484	A. E. Fridlander, Coventry ...	31·4	36·3	15·2	82·9*
" " "	14780	H. Golay, London	27·7	34·1	19·9	81·7
" " "	79352	The English Watch Company, Birmingham....................	25·1	35·0	18·5	78·6
Perpetual calendar and repeater........................	14782	H. Golay, London	30·1	36·8	15·1	82·0
" " "	14794	H. Golay, "	23·9	31·6	19·5	75·0
" " "	14792	H. Golay, "	28·6	32·9	11·2	72·7
Repeater	14727	G. Barter, London	29·7	36·0	15·8	81·5
"	14785	H. Golay, "	30·3	35·9	14·0	80·2*
"	14784	H. Golay, "	31·3	34·2	13·3	78·8*
Ordinary seconds chronograph........................	47147	Carley & Co., London...........	28·1	35·5	17·6	81·2
" " "	03603	E. F. Ashley, "	29·5	34·6	14·7	78·8
" " "	80543	Rotherham & Sons, Coventry	24·9	29·2	18·3	72·4

* Especially Good.

The Lancashire Watch Company, Limited.

We have received the following circulars, which, we understand, have been sent to the principal watch manufacturers throughout the country. The price list mentioned does not show any material enhancement of the prices charged by the principal Lancashire firms.

Prescot, *January* 1, 1889.

Dear Sir,—We have succeeded to the businesses of Messrs. Wycherley, Hewitt & Co., Isaac Hunt & Co., E. Beesley & Sons, H. Dagnall & Son, and Wood & Morton, of Prescot; J. Watkinson, and Ralph Greenall, of St. Helen's; and J. Basnett, of Coventry, watch movement makers, and will continue the manufacture as at present carried on by the above firms.

We propose to develop the trade of watch movement-making by combining all the business under one roof and management, introducing (where required) the best and newest machinery, and making leading sizes in the most advanced form and design, and at prices that we hope will increase the sale.

Appended is the Company's present Price List. We hope to find that you will be enabled to place the whole of your requirements in our hands, to which we shall at all times give our best and immediate attention.

We are, yours faithfully,

The Lancashire Watch Co., Ltd.

Prescot, *January* 1, 1889.

Dear Sir,—We beg to advise you that we have disposed of our business to the Lancashire Watch Company, Limited.

We have been induced to join the Company, believing it afforded means for advancing the manufacture in such ways as our individual efforts could not have attained, and we trust our belief will soon be realised, and that you may soon experience the benefits of the capital and labour the Company propose to expend.

Thanking you most cordially for your past favours and trusting still to be employed upon your work, as we have undertaken a responsible position under the Company,

I am, yours very faithfully,

Thomas P. Hewitt,

Wycherley, Hewitt & Co.

Gazette.

Partnerships Dissolved.

Ainsworth, Taylor and Co., Birmingham, electro-plate manufacturers, so far as regards G. Taylor. Booth and Clutterbuck, Birmingham, manufacturing silversmiths. Phillips, Brothers, and Son, Cockspur Street, court jewellers. T. Basnett and Co., Liverpool, nautical instrument makers. Johnson, Sons, and Edmunds, Bedford Row, goldsmiths, silversmiths, and pencil manufacturers. Wickes and Trahern, Coventry, watch case makers. J. Raphael and Co., Oxford Street, wholesale opticians. Delaroque and Luby, Regent Street, opticians. Parkin and Bacon, Sheffield, engravers. Jacob and Ross, Winchester, jewellers.

THE BANKRUPTCY ACT, 1883.

Receiving Orders.

To surrender in London.—Jacob Samuel Streletskie, Newcastle Street, Whitechapel, diamond polisher. Joseph S. Levy (trading as J. S. Levey and Co.), Barbican, City, and Paris, importer of clocks, &c. William Tucker (trading as Gustavus Boudry and Co.), Thavies Inn, Holborn, watch agent. William Frederick Warr, Barnwell Road, Brixton, jeweller. Nicholas and Paine, Chester Terrace, Eaton Square, jewellers.

To surrender in the Country.—Brame King, Eye, Suffolk, watchmaker. J. C. Blundell, Liverpool, watch manufacturer. William S. Blundell (trading as Thomas Blundell and Sons), Liverpool, watch manufacturer Elijah Allsopp, Nottingham, watchmaker.

Public Examinations.

In London.—J. S. Streletskie, Newcastle St., Whitechapel, Feb. 5, at 11.

In the Country.—E. Allsopp, Nottingham, jeweller, February 8, at 10.

Notices of Dividends.

In the Country.—H. Smithers, Coventry, watch manufacturer, 1⅓d. first and final, E. T. Peirson, Coventry. S. Southey, Manchester, jeweller $1\frac{3}{16}$d., second and final, 37, Brown Street, Manchester. J. H. Smith, Birmingham, engraver, 3¾d., first and final, Colmore Row, Birmingham. G. Handsom, Bedale, Yorks, jeweller, 3s. 3d., first and final, Official Receiver, Middlesbrough. T. Johnson, Newcastle-on-Tyne, watchmaker, 3s. 2d., first and final, Official Receiver, Batley. S. M. Ayres, Dewsbury, watchmaker, 6s. 10d., first and final, Official Receiver, Batley. E. Amans, Eton, watchmaker, 5s. 6d., first and final, 119, Victoria Street, Westminster.

Scotch Sequestration.

L. Rombach, Glasgow, watchmaker.

LONDON BANKRUPTCY COURT.—Jan. 23.

(Before Mr. Registrar Giffard.)

Re Maurice Bath.—This was a meeting for public examination. The bankrupt was a diamond cutter and polisher, of Hatton Garden, and applied to pass his public examination upon accounts showing debts unsecured £2,800, and mainly attributed his failure to the loss of a packet of diamonds valued at £2,000. The Official Solicitor appeared for the Official Receiver, Mr. F. Cooper Willis for Mr. L. Hasluck, the trustee. Mr. Lewis for creditors, and Mr. Kingwood for the bankrupt. The bankrupt stated that in October last he went to Antwerp to get a certain class of diamonds "on appro." While there he received a telegram from his brother to state that he had lost a parcel of diamonds worth £2,000. He (bankrupt) was in the habit of sending the finished diamonds to the Union Bank for safety, and on Friday—as he (bankrupt) went away on the Wednesday—his brother, had to take these diamonds to the bank. He visited several public-houses and got to the bank too late, and when he got back he found that he had lost the diamonds. The police were communicated with, and he offered a reward of £200, but without success. After a long examination, mainly for the purpose of showing that the bankrupt never had the diamonds to lose, the case was adjourned to February 13, to enable further accounts to be filed.

The Deeds of Arrangement Act, 1887.

MIDDLESEX.

Morisse, Walter Diederick, 17, Northampton Square, Clerkenwell, silversmith. Unsecured liabilities, £180 2s. 3d. Deed of Composition dated December 31. 1888; filed January 4, 1889. Composition of 6s. 8d. in the pound by three instalments, April 30, 1889, August 30, 1889, and December 30, 1889 (secured). Total Composition, £60 1s. 9d.

WARWICK AND WORCESTER.

Ashwin, John, 24, Spencer Street, Birmingham, and Valentine Road, King's Heath, Worcestershire, manufacturing jeweller. Trustee, Allen Edwards, C.A., 14, Bennett's Hill, Birmingham. Liabilities, £3,588 15s. 3d.; assets, £1,036 6s. 1d.; creditors (preferential), £162 10s. 1d. Deed of Composition dated January 10, 1889; filed January 17, 1889. Composition of 5s. in the pound by four equal instalments, payable April 14, 1889, August 12, 1889, October 12, 1889, and January 12, 1890; the last two instalments being secured.

Applications for Letters Patent.

The following List of Patents has been compiled especially for *The Watchmaker, Jeweller and Silversmith*, by Messrs. W. P. Thompson & Boult, Patent Agents, of 323, High Holborn, London, W.C.; Newcastle Chambers, Angel Row, Nottingham; and 6, Lord Street, Liverpool.

18,670. J. Wilkinson, Birmingham, for "Improvements in cases for watches, pedometers, and other pocket instruments, also applicable to timepieces and other instruments requiring such like cases." Dated December 21, 1888.

19,066. J. G. Lorrain. London, for "A new or improved secondary clock." Dated December 31, 1888.

19,067. J. G. Lorrain, London, for "A new or improved secondary clock." Dated December 31, 1888.

77. E. Billault, London, for "The manufacture of jewellery, gold and silversmith's ware, buttons, and other ornamental objects for dress, furniture and the like from sulphide of silver." Dated January 2, 1889.

117. C. W. Ogden, London, for "Improvements in gold tables and apparatus connected therewith." Dated January 3, 1889.

137. M. Breslauer, London, for "An improved alloy to serve as a substitute for silver." Dated January 4, 1889.

168. F. T. Sly, London, for "Improvements in solitaires, studs and the like." Dated January 4, 1889.

256. L. P. H. J. Mauclaire, London, for "Improved means and apparatus for treating gold, silver and other ores." Dated January 7, 1889.

309. Percy Whitten, Gloucester, for "An improved breast and scarf pin." Dated January 8, 1889.

317. M. Wilcox, Birmingham, for "Improvements in watch bars for watches." Dated January 8, 1889.

366. W. Wingrove, London, for "Improvements in bracelets or bangles." Dated January 8, 1889.

396. J. Spiers and A. Spiers, Birmingham, for "Improvements in cases for electro-plate, cutlery and silver wares." Dated January 9, 1889.

424. C. Ruhnke, London, for "Improvements in repeating mechanism for time keepers." Dated January 9, 1889.

518. W. Maguire and W. A. Taylor, Birmingham, for "An improved stud or solitaire." Dated January 11, 1889.

756. J. Rotherham, W. Johnson, and E. T. Loseby, London, for "An improved method of attaching rings to watches, knobs and other articles" (Complete specification.) Dated January 15, 1889.

858. W. Maguire and W. A. Taylor, Birmingham, for "Attachment for sleeve links." Dated January 17, 1889.

896. F. L. Rawson, London, for "Improvements in time checks." Dated January 7, 1889.

966. W. Wingrove, London, for "Improvements in bracelets, bangles, armlets, leglets, garters, brooches, buckles, pendants, and such like articles by combining a certain useful article therewith." Dated January 18, 1889.

983. C. Adams-Randall, London, for "Improved electric time alarm and indicator." Dated January 19, 1889.

1,043. S. Löwenstein, London, for "An improved watch protector." Dated January 19, 1889.

Recent American Patents.

Blow Pipe. G. W. Melotte	394,657
Bracelet. Alice Johnstone	395,148
Case for holding and presenting Trays or Boxes. E. Reynolds	394,210
Clock. C. Bickford	394,816
Clock Striking Mechanism. C. Aronson	395,110
Compensating Watch Regulator. W. H. Shear	395,182
Controlling Device for the Regulating Members of Clocks. W. S. Scales	395,357
Cuff Holder. R. J. Newman	394,206
Cuff Holder. R. Ward	395,193
Finger Ring. D. Kutner	394,928
Flux for the refining of Metals. J. Webster	394,742
Gold Leaf Cutter. J. F. O'Hara	394,717
Jewellery. B. D. Traitel and J. Rawiszer	394,523
Machine for Cutting Solder for Jewellers' use. S. F. Merritt	394,201
Mainspring Winder. A. F. Robbins	394,507
Mechanical Musical Instrument. F. Stone	394,794
Plated Wire Stock for Jewellery. J. S. Palmer	394,603
Raised Stone Incrusted Letter. C. Gosling	395,563
Stop Motion for Music Boxes. G. J. Jaccard	395,440
Stop Watch. Ami L. Piquet	394,933
Timepiece Dial. M. V. B. Ethridge...	394,845
Watch Case Pendant. P. A. C. Bradford	395,209
Watch Regulator. E. F. L. Grandjean	394,919
Watch Regulator. R. B. Richmond...	395,351
Watch Winding Mechanism. C. Morlet	395,166
Workman's Electric Time Recorder. W. K. Bassford	394,049

A printed copy of the specifications and drawing of any patent in the American list, also of any American patent issued since 1866, will be furnished from this office for 2s. 6d. In ordering, please state the number and date of the patent required, and remit to J. Truslove, Office of *The Watchmaker, Jeweller and Silversmith*, 7, St. Paul's Churchyard, E.C.

Correspondence.

All Letters for Publication to be addressed to the EDITOR *of* THE WATCHMAKER, JEWELLER AND SILVERSMITH, *7, St. Paul's Churchyard, E.C.*

All communications must bear the name and address of the sender, not necessarily for publication, but as a guarantee of good faith.

To the Editor of *The Watchmaker, Jeweller and Silversmith.*

THE DUTY ON SILVER PLATE.

Sir,—The above question seems to be but imperfectly understood, even by the trade itself, otherwise surely some attempt would be made to place the true state of the case before the Chancellor of the Exchequer. The sum produced by the duty is such a comparatively small amount that the financial aspect of the question would probably have but little weight with the Right Honourable gentleman, but to manufacturers and their workmen the question is a matter of life and death. It is impossible to increase the consumption of silver plate; thus, there being no extra demand, it follows as a natural sequence that imported silver plate would to a very great extent take the place of home manufactured articles, whilst to the public at large the abolition of the duty would be most injurious. The present guarantee as to quality would almost entirely disappear, and the market would be flooded with goods scarcely worth the name of silver. The abolition of the duty is not desired, either by the trade or the buying public, and the agitation is mainly kept alive by a few egotistical gentlemen who desire a cheap advertisement. If their efforts are successful, one of our oldest industries will be almost crushed out of existence. The guarantees which the public now possess against fraud will cease to exist, and all this without a single compensating advantage. I trust, however, that workmen, as well as manufacturers, will at once take steps to place their views before Mr. Goschen. If this is actively and properly done without delay, I think there will be no difficulty in laying the ghost so much beloved by mere theorists, but with which practical, commonsense men will have nothing to do.

I am, Sir, yours respectfully,

9, Albert Road, H. Goodall.
Tue Brook, Liverpool.

Sir,—In the interest of the trade in general, will you kindly answer this question in your next issue? In October last, I repaired a Striking Dial for a customer. When done, had a deal of trouble to get paid (after taking it home and hanging it up), finally got two shillings on account, customer complained after that the clock did not go, and I agreed that I would see to it, could not do it at the house so brought it away, giving the servant my reason for doing so, the wife came like a fury and said I had no business to take it away, she being out at the time, and now accuses me of stealing it. I do not feel disposed to part with it until the balance of account is paid. Am I justified in detaining it?

Yours respectfully,
Edouard.

[You are not justified in detaining clock. Should you persist in so doing, the owner would have ground for an action for unlawful detention. Your remedy is in the County Court.—Ed.]

The

Watchmaker, Jeweller & Silversmith.

EDITED BY D. GLASGOW, JUN.

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The Watchmaker, Jeweller and Silversmith.

A Monthly Journal devoted to the interests of Watchmakers, Jewellers, Silversmiths, Opticians and kindred traders.

Correspondence.—Correspondence is invited on all matters of interest to the trade. Correspondents will please give their full address in each communication, not necessarily for publication, but as a guarantee of good faith.

Subscription.—A copy of the Journal will be sent monthly for one year, post free, to any address in the United Kingdom or countries in the Postal Union for 5s. payable in advance.

Advertisements.—The rates for advertising will be sent on application. THE WATCHMAKER, JEWELLER AND SILVERSMITH will be found an exceptional medium for advertising. Special Notices, Situations, &c., per insertion, 1s. for two lines, prepaid.

Address all business communications to the Publishers,

MESSRS. TRUSLOVE & SHIRLEY,
The Watchmaker, Jeweller & Silversmith,
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Cheques and Postal Orders to be made payable to J. TRUSLOVE.

Editorial.

FROM the publicity given to the subject in the daily press, an outside observer might be led to suppose that the abolition of the duty on gold and silver plate was just now a burning question in both the manufacturing and retail trade.

The fact is, however (as most of our readers very well know), it is a subject apt to crop up in dull periods, like the sea-serpent or gigantic gooseberry, for want of a better, when, after having been taken up for a time by some of the trade journals and left in, if possible, a little more confusion than before, the public finally get it in the form that best accords with the views of the particular paper in which it appears, or the objects of the writers.

Although most of those who are directly interested in the abolition or continuance of these duties are well enough able to argue the matter, it is not they who come most prominently forward as controversialists (to them the matter lies in a nutshell), and the amount of ignorance displayed in these perennial discussions is therefore the less startling. When such topics become public property, faddists of every theory (pseudo reformers and economists of all kinds and calibres), think it incumbent to enter the lists, when, it is not long before they are enabled by some side issue to trot out their favourite hobby.

By this means it is generally the case that, in problems of the kind, without advancing in any way to their solution, we get a recapitulation of every argument that has been used from the abolition of the Corn Laws down to the Merchandise Marks Act. In the present case we have column after column, in which, even when the personalities are eliminated, the arguments for and against the plate duties are so mixed up with totally irrelevant matter as to be sufficiently confusing, but which, when the abuse is included, are altogether mystifying to the average intelligence.

It is by some such ingenious process that the Hall-marking question is brought, in all its various phases, into the present debate, and by a similar course of ratiocination the Assay Office authorities are connected with and made responsible for the existence and enforcement of these taxes, with which, as a matter of fact, they have nothing whatever to do save the collecting of them.

The difficulty, as we have before said, lies in a nutshell: it is entirely one of drawback—between what the Government will grant and what manufacturers will accept.

No logical defence can be found for any such tax on industry—a tax which may make little or no difference to manufacturers in the home market, where all are equally subject to it, but which seriously handicaps our export trade, and, if for no other reason, should be abolished on principle. We are no parties to any sacrifices on the silversmiths' part. All plate that has had duty paid for it should be allowed for, and if the Government cannot see their way to an equitable adjustment of the business, a committee of the trade should be appointed (say on the lines of the Birmingham Jewellers' Association) with power to act for the trade as a whole, to help the lame dog over the stile.

WHILE on the subject of Assay Offices, we are reminded of the recent complaints about the action of the Birmingham Assay Office authorities in connexion with the 9-carat gold wedding-ring prosecutions; said complaints being that after giving an assurance to the effect that they would take no steps to bring to book those makers who might infringe the law by making such rings without having them stamped and thereby evading payment of the duty, they afterwards prosecuted the offenders. Well, what did this amount to? The assurance meant that it was no business of the Assay Office people to constitute themselves trade censors. But then if a formal information of a breach of the law be lodged with them, they are bound by Act of Parliament to prosecute. It is true, they might, had they thought fit, have added this to their assurance of non-interference, but we don't think it would have made much difference in the end had they done so; the people who have been making capital out of the passive, or neutral, policy of the Assay Office for so long, and who are now, as a matter of course, loudest in their outcries about the injustice of the proceedings, have come very well out of the business; they knew very well what they were doing, or, if not, should have known and will know better in future.

For our part, we should be glad to see the law carried a little further, and applied to those makers and sellers of bogus, nth quality, stuff which they euphemistically term gold; a few prosecutions in this direction would do much towards instilling a healthier tone into some branches of the jewellery trade.

THE London Watch Trade Association is naturally not a little elated at the success of its recent proceedings against Mr. Andrew Campbell, of Cheapside, and it is perfectly plain that it was fully justified in instituting such proceedings. The action was taken under the Merchandise Marks Act, although on the face of the report (which appears on another page), it does not at first sight appear why an action under that Act was necessary; that is to say, why an action at common law, on the ground of misrepresentation, could not have been taken. This is explainable, we understand, from the fact that no guarantee as to the watch being of English construction was given or required; but the marks on the watch constituting an infringement of the Act rendered the result easy.

While we are glad to see that, while being held responsible for the proceedings of his employees, Mr. Campbell was personally exonerated from blame in the matter, we are also pleased to observe that the Association does not mean to let the Act, which was obtained with so much difficulty, remain a dead letter. A few more such proceedings on the part of the Association will justify its existence as an organisation, and gain the confidence of the trade, while acting as a strong deterrent in the required direction.

General Notes.

THE Postmaster-General will visit Birmingham early in the month, and lay the foundation stone of the new post-office.

AFTER we went to press last month, Mr. John Basnett, watch movement maker, of Riley Street, Coventry, was convicted of an offence under the Truck Act, and fined 20s. and costs.

THE dials of the enormous clock belonging to the Singer Manufacturing Company, at Kilbowie, Glasgow, weigh 22 tons; the pendulum weighs 672 lbs.; and the diameter of each dial is 25 feet, 8 inches.

THE PRESCOT WATCH TRADE.—The workmen connected with this trade have formed an Association for the purpose of adopting a rate of wages and such measures as they may deem advisable for the interests of the trade.

MR. HENRY WHITE, Secretary of the United States Legation, has offered a reward of £500 for the capture and conviction of the burglars who recently broke into his country house, and carried off jewellery of the value of nearly £7,000.

THE LANCASHIRE (PRESCOT) WATCH COMPANY, LIMITED.—The old established firm of Isaac Hunt & Co., watch movement manufacturers have, we learn, retired from this Company by mutual consent, and the company have lost the services of Mr. Berry, a partner in the firm, as secretary.

FORGED BANK OF ENGLAND NOTES.—At the Central Criminal Court on February 6, Thomas S. Cottam, an engraver, well-known to some of our London readers, was indicted for having feloniously in his possession a copper plate for engraving forged Bank of England £5 notes. The evidence of detectives substantiated the charge, and the prisoner was sentenced to seven years' penal servitude.

LANCASHIRE WATCH COMPANY, LIMITED.—A deputation consisting of Messrs. Tyrer (solicitor to the Company), Hartley and Hewitt waited upon the Earl of Derby, on Thursday, February 7, for the purpose of laying before his Lordship the intentions of the Company with the view of influencing his Lordship to become a shareholder. We understand the Company intend erecting a large factory.

MESSRS. ROTHERHAM & SONS, who were the first to apply for space in the section allotted for such exhibits, will have an extensive show of English watches at the Paris Exhibition. From the mode of carrying on business, and the style and quality of the work produced by this firm, English watchmakers (and Coventry in particular) should have no reason to anticipate an inadequate representation at the forthcoming World's Show.

Royal Scottish Society of Arts.—At a meeting of this Society held on January 28, the President (Mr. F. B. Imlach) in the chair, Mr. John Sellar Matheson, chronometer maker, Leith, made a communication on compensation balances, and showed a new index which he had prepared for the more accurate rating of chronometers. The communication was favourably received, and remitted to a special committee to be considered and reported upon.

A robbery on the American plan of tying up the door and smashing the shop window was perpetrated last month, on Mr. Henry Spilling, goldsmith and jeweller, of Great Russell Street, Bloomsbury. Joseph Buxton, the thief, who is stated to be an American, made the mistake of using too slight a cord in his preliminary operation, so that the assistant succeeded in forcing open the door and catching the prisoner, who got twelve months' "hard."

We understand that subscriptions are being asked for the Coventry Watch Movement Manufacturing Company. The capital is to consist of £20,000. The first issue is to be 2,000 shares of £5 each, payable £1 on application, £1 10s. on allotment, and the remainder at such periods as shall be from time to time determined. The preliminary list of directors includes nearly all the best known watch manufacturers of Coventry, and many other well-known manufacturers have agreed to take shares, and to give the Company their support.

Mr. Frederick B. Box, whose name will be familiar to many of our readers as the son of his father, who formerly carried on business for many years as a watch manufacturer, at 21, Upper Charles Street, Northampton Square, has started an agency for the disposal of watchmakers' and jewellers' businesses, at 6, Thavies Inn, Holborn Circus. Besides having the technical knowledge necessary for making valuations of stock, &c., Mr. Box is a thoroughly practical accountant, and as such an agency has long been wanted by the trades named, he may be expected to enjoy a large patronage. We cordially wish him success in his new venture.

Sheffield Manufacturers and the Plate Duties.—A meeting of the Sheffield plate manufacturers was held last month to consider the proposed abolition of the plate duties and of compulsory hall-marking. The meeting was unanimously in favour of representing to Mr. Goschen the wish of the trade that hall-marking should remain compulsory. On the question of plate duty there was considerable difference of opinion and much discussion. On a vote being taken it was found that the meeting was about equally divided as to retaining the duty. A committee was appointed to formulate the view of the Sheffield trade on the questions at issue in the form of a memorial to the Chancellor of the Exchequer.

The following is a list of the principal jewels stolen in the burglary committed at the residence of Mr. White, First Secretary of the United States Legation, on January 30. Dealers should look out for the reward offered.—A large diamond solitaire; earrings, very large pearl, surrounded by diamonds, with pearl-shaped pendant attached; a large dragon fly, composed of rubies, diamonds, sapphires and pearls; a diamond and pearl bracelet; a tiara of six daisies set with diamonds; a large diamond and pearl finger ring; a Danish enamelled bracelet with emeralds and diamonds; a set of turquoise and diamond bracelets; watch and pendant; bracelets; a carbuncle and diamond bracelet; a rosebud-shaped brooch with pink and black pearl; a number of small pins, arrow-shaped, with diamonds and pearls; a beetle pin with diamond; small butterfly diamond pin, and several gold bracelets.

We publish on another page a letter from Mr. G. M. Whipple, Superintendent of the Kew Observatory, having reference to a paragraph in our "General Notes" of last issue, in which we gave the receipts and expenditure for the rating of watches at Kew for last year as £532 odd, and £106 odd, respectively. Mr. Whipple takes exception to the note referred to on the ground that we did not take salaries into account, and that, therefore, it would lead to the supposition that there was a very large profit accruing to the rating department. As it is just possible others may have put the same construction on our remarks, it may be well to explain here that no such implication was intended by the paragraph in question; we simply gave the figures as an item of trade interest, as showing the growing importance these trials are assuming. The continually increasing demand for Kew certificates shows the just appreciation in which they are held by the trade, and, of course, their value is largely due to the unimpeachable character of the institution from whence they issue.

As to the commercial aspect of the case (although it was not in any way in our mind when recording the figures abovementioned, which were taken from the official balance sheet), we cannot help thinking that it would be a great benefit to the trade (as well, perhaps, to the institution which undertook the reduction) could the fees for testing watches be largely reduced in amount. There is no doubt such a reduction would result in greatly increased numbers of watches being sent for trial, especially from the greater number of smaller manufacturers, who would thus be admitted into the lists, and to whom the present fees are to a large extent prohibitory.

Could not, at all events, the trade be put to some extent on the footing of nominal fees, as is the case, we believe, in some of the foreign countries wherein such trials are held and where the testing departments are under government authority? In Switzerland, for instance, where the fees for rating and granting certificates (together with full abstracts of the rates without extra charge, which abstracts are full of instruction to timers) are very much lower than at Kew, these departments cover all expenses without subsidy from the government. which is entirely owing to the large numbers of watches sent in for testing.

We make the suggestion for what it is worth. The democratising (as the French call it) of most other undertakings has paid even in this country, and there is no reason why it should not succeed in the case of watch testing; at all events it is worth trying. We don't suppose the Royal Society is in need of funds, and we assume the committee would be content to cover expenses in each of their many departments. Seeing, therefore, how much success these watch trials have met with since their inception, could not the Kew Committee try the experiment of making gradual reductions in the fees, in the interest of the English watch trade, until, say, the democratic half-crown was reached? This sum would be quite sufficient to deter makers from sending in watches that had no chance of passing the tests, and render the trials of universal value to the trade. At present, many manufacturers of even the highest class watches rely on their own tests and reputations rather than be at the trouble and expense of sending their watches to Kew in order to obtain a warranty that is of doubtful value, as not being in universal demand.

The Diamond Market.—The *Amsterdam* trade is showing signs of improvement. Sales have increased at rather advanced prices, and the factories are fully occupied. There is a good demand for rough and cleavages. Small stuff is being worked up just now; good quality stones, of from two to six grains, being saleable at moderate prices.

The *Paris* trade is very quiet, few foreign buyers being present and no recent American consignments are to be noted.

The usual Cape liners arrived at Plymouth during the month and the London market has been pretty brisk, *yellows* and *heavy spotted stuff* being in least demand.

Latest from *Kimberley* report moderate demand, prices being well maintained.

Metals.—*Silver.*—Bars, 43d. per oz.; *Copper.*—Chili bars, good ordinary brands, and G. M. B.'s, £77 10s. to £78. *Tin.*—Fine Foreign, Straits, £95 7s. 6d. to £95 17s. 6d. Australian, £95 17s. 6d. to £96 7s. 6d. *Lead.*—Spanish soft, £12 15s.; English, £13. *Spelter.*—Ordinary, £17 10s.; special, £17 12s. 6d. *Quicksilver.*—Importers' price, £8 10s.; second-hand parcels, £7 18s.

Board of Trade Returns.

THE clocks and parts imported during January are valued at £27,250, in comparison with £30,513 for the same month of last year, and £26,478 for that of 1887.

The following shows the sources of the supply:—

January	1887.	1888.	1889.
From France	£12,108	£12,664	£9,701
„ United States	£6,244	£6,315	£6,235
„ other countries	£8,126	£11,534	£11,314

The watches and parts thereof imported during last month valued £45,126, against £47,199 in the same month of last year, and £56,603 in that of 1887.

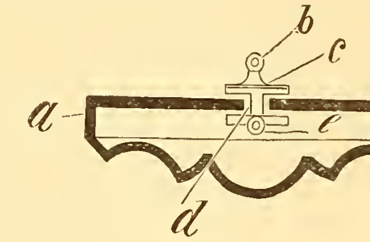
The plate and plated and gilt wares exported during January amounted to £27,061, in comparison with £24,832 in the same month of last year, and £23,509 in that of 1887. These figures show a gratifying increase, which ought to be maintained.

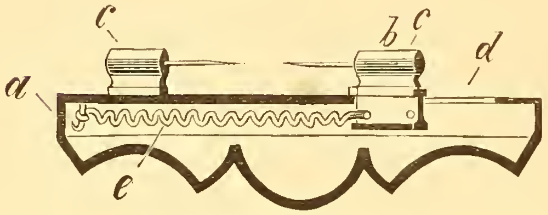
The total value of imports of all kinds of produce last month are valued at £38,025,774, against £34,802,988 in the January of last year, and £31,047,422 in that of 1887.

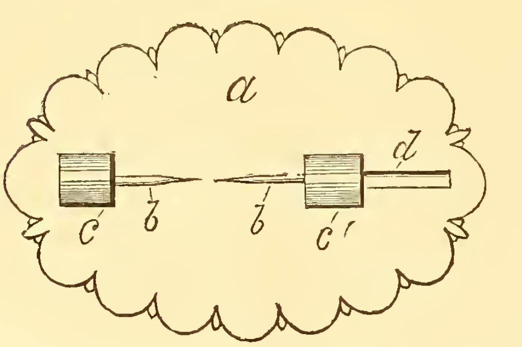
The total value of exports of British and Irish produce are recorded for the first month of this year as of the value of £20,479,341, in comparison with £18,583,671 for the January of last year, and £17,808,735 for that of 1887.

Trade Notes.

Messrs. Bergna Brothers, of 217, High Street, Sunderland, have invented a new safety fastening for brooches, which the accompanying illustrations will make readily understood.







To secure the brooch, the sliding pin (*b*) is first inserted in the fabric and then drawn back against the action of the spring (*e*) which is readily done by drawing forward the brooch. The fixed pin (*b*) is then inserted, and on releasing the brooch the spring returns the sliding pin towards the fixed pin and the fastening is effected. The unfastening and removal is accomplished by reversing the above operation and raising the fixed pin when withdrawn clear of the fabric.

Mr. James Fenton, manufacturing jeweller, of 74, Great Hampton Street, Birmingham, has introduced to the trade a new silver thimble, which he has christened the "Gripper," from the fact that the holing is so constructed that it, so to say, grips the needle and effectively prevents it from slipping off into the finger. It is claimed for this thimble, that the shape of the holes causes all the pressure to come on the strongest part of the thimble, and, in addition to the advantage aforesaid, renders it so durable that it will wear longer than two or three of any other pattern.

New Clock for Middlesbrough.—The new clock for the superb tower in the new Town Hall has been constructed by Mr. R. Richardson, of Sussex Street, Middlesbrough, the well-known turret clock maker. The four opal dials are 110ft. from the ground, and are 9ft. in diameter. The figures are 10in. and and the minute marks 5in. in length, the minute hand 4ft. 6in. in length, and the smaller pointer proportionate. The clock will strike the hour on a bell weighing two tons, and the quarters will be chimed on bells weighing altogether a little over two tons. It is fitted with Lord Grimthorpe's three-legged gravity escapement, and a compensation pendulum of zinc and iron. The illumination will be effected by an ingenious invention which Mr. Richardson has himself constructed and introduced into the mechanism of the clock, by which the gas will be turned off and on at sunset and sunrise throughout the year without the slightest necessity for regulation. The clock with all its accessories will cost about £800. The clock was started by the Princess of Wales the other day by means of an electrical attachment. The pendulum, which is over 8 feet long, on 1½ seconds, weighing nearly 3 cwt., was held at an angle ready to escape by an iron lever jointed at the end farthest from the pendulum, and having a hole at the other end to receive the end of the pendulum rod; over the lever was held a hammer so nearly balanced, that when the electric current acted on the battery to which the hammer was attached, it released a catch, allowing the hammer to fall on the lever, thus freeing the pendulum which at once commenced to vibrate. We believe this to have been the first occasion on which electricity has been made the medium for such a ceremony.

Modern business success is mainly dependent on enterprising departures from the beaten track, and attention to details, which many of the old school would consider trivial, not to say *infra dig.*, to notice. In the former direction (and, from that, we may assume, in the latter also), Messrs. Swinden & Sons, of Temple Street, Birmingham, are not going to be left behind. They now announce that they will be pleased to telephone the correct time, the current of which they receive direct from Greenwich, to all telephone subscribers in the Birmingham circuit (numbering some 750) on application; they also take orders through this medium.

In answer to various correspondents, the English Watch Company, Villa Street, Birmingham, announce that they are prepared to take orders for movements of their construction. These are supplied with full cap; wind as fusee; barrel arbor and winding arbor finished; train holes drilled, including escape wheel hole.

The prospectus of the Lancashire Watch Company, Limited, has been issued. The share capital is £50,000 in 5,000 shares of £10 each. 1,610 shares will be issued as fully paid, and the remaining 3,390 are now offered to the public. The payments are £2 10s. per share on allotment; the calls not to exceed £2 10s. per share, and to be made at intervals of not less than three months. The secretary is Mr. James Hewitt, and the registered office of the company is 13, Vicarage Place, Prescot.

A correspondent of the *Sheffield and Rotherham Independent*, has had an interview with Mr. Wycliffe Wilson, of the Sheffield Smelting Company, who gives some novel and instructive points on assaying grievances and the hall-marking question, from Sheffield's standpoint. Want of space compels us to hold over an abstract of the interview, which we hope to give in our next issue.

Birmingham News.

From Our Correspondent.

MANUFACTURERS report a slight falling off in orders during February, but on the whole there is not any very great cause for complaints, some houses keeping up the out put to their fullest limit, and others finding orders somewhat scarce in certain branches. The general returns for the month will prove to be fairly satisfactory. There has, of course, been considerable dissatisfaction expressed in connection with the bankruptcy cases of J. and F. Bromage and Bishton and Fletcher, both of which have been to the fore during the past month.

* * *

The Jewellers and Silversmiths' Association is showing its members and the trade generally that it has powers and intends to use them. The members of the same who were present at the meeting of creditors of the firm of Bishton and Fletcher on Wednesday afternoon, February 20th (details of which will be found on another page) put a variety of questions to the lawyers which they (the lawyers) thought it would be best to leave unanswered, the majority of the creditors thinking that the case was one that required daylight for its investigation, decided upon filing a petition in bankruptcy. That the Association was the mainspring of this movement is obvious, and if the trade will only back them up by becoming members and paying their subscriptions, and thus creating a fund for the Committee to work with, they will do a great deal towards raising the tone of the trade. The jewellery trade, under its present mode of doing business by renewed bills, accommodation bills, unlimited credit and appro., is regarded by business men of good standing, who work upon rational principles, as nothing better than a money-lending affair, and I, for one, am beginning to feel it somewhat of a disgrace to belong to such a community. Now, all this can be altered, and must be altered, and a step towards this consummation will be for the trade to unite itself together and subscribe to the Association : they will thus create for themselves a power that at present they are very short of.

* * *

A new firm has already risen, Phœnix-like, out of the ashes of the old one. Mr. Marlow, late practical manager to Messrs. Bishton and Fletcher, has stepped out on his own account and taken for a partner Mr. Vaughton, a son of Mr. E. Vaughton, jeweller, Warstone Lane, Birmingham. The new firm have taken premises in Frederick Street. I must congratulate Mr. Marlow for the enterprise he displays in thus making a move for himself, and wish him and his partner every success in their new venture.

* * *

The engravers are grumbling a good deal at the shortness of work. Some of the out-workers state that February has been the worst month for some time past. The cause is to be traced to the fact that chasing has become fashionable, and thus taken the place of the engraver's art for the present.

* * *

The taste so prevalent of late for wearing imitation diamonds, such as foiled paste, has created a demand for them mounted in a better style than has yet been done. The mounts until recently have not been produced in anything more valuable than metal-gilt and silver, but some of the newest goods in this line are in 9-carat gold finished bright like diamond work, and added to this good designs and neat workmanship ; the result is a very tasty and somewhat valuable piece of jewellery. Intending buyers will find a stock of this class of goods at Mr. G. E. Cramp's works, 22, Vyse Street, Birmingham.

* * *

In passing through the exhibition of the works of the students of the Birmingham School of Art, I was pleased to notice that the works of various classes in design have increased of late ; the examples in design for silversmiths' work produced in modelling shows merit in various directions ; this system of modelling the design for a piece of art manufacture, instead of the old plan of drawing the same, is a very powerful step in the right direction. If the workman has a model of the piece he has to produce placed before him, he can't very easily fail to understand what is meant —a drawing is often open to dispute. The same method has been employed to designs for jewellery but with less success, and the cause of failure is principally due to the fact that neither teacher nor pupil are practical jewellers—at any rate their efforts give strong evidence that such is the case ; the details of the design are in nearly all cases weak and uncertain, as if the modeller did not know what he wished to be produced in actual work, but merely made a suggestion, leaving the workman to render it in his own fashion. If the jewellers' classes recently established are to be of service to the trade, they must have practical teachers at the head of them, and as I have stated before, there are several art teachers in the trade holding government certificates who are also practical designers ; there should be no difficulty in making this arrangement. Up to the present time there has been very little, if any, encouragement given to designers in the jewellery trade; there has been too much confidence placed in workmen's patterns, and what few designers there are in the trade express themselves disgusted at the remuneration and treatment they have received ; this may be altered in the future, but until manufacturers open their eyes to the fact they will not get practical designers. A brassfounder keeps a designer, a chandelier maker, electro-plate manufacturer, cabinet maker, and numerous others find it both necessary and profitable to keep a designer and pay good wages ; there is not more than one jeweller in the trade who has a designer, pure, simple, and practical on his premises ; there are numerous instances of youths in the trade proving their skill as designers at the School of Art; there is not one instance of a jeweller offering a situation as designer to such a youth, although many of them have had offers from brassfounders and kindred trades which they have accepted ; an instance of this has just occurred. Jewellery manufacturers take note of this!

An antique silver table-spoon, which had been pledged for 5s., last month realised the sum of £4 5s. at Messrs. Debenham & Storr's sale, being at the rate of nearly 50s. per ounce.

Why should the third finger of the left hand be selected for the wedding ring? This is a question which possibly very few could answer. According to folklore it was selected for the honour of wearing the wedding ring because formerly it was believed that a nerve passed directly from it to the heart.

From among other interesting items on the industries of the country given in a contemporary we cull the following:—

Buttons.—Birmingham produces buttons in bone, horn, ivory, boxwood, ebony, kingwood, and other expensive woods ; in pearl, nut, porcelain, papier-mâché ; and in brass, copper, iron, steel, tin, and other metals. Birmingham remains the only district in England in which buttons are manufactured. They are turned out by the million every week. About 150 employers and 6,000 operatives are engaged in this trade. One firm alone cuts up in a year no less than 63,000 yards of linen cloth and 34 tons of metal for buttons.

Pins.—Pins are now made in Birmingham almost instantaneously by an ingenious machine invented in America. During a single revolution of a wheel the requisite length of brass wire is cut off, pointed at one end, and provided with a head at the other, leaving nothing to be done but the whitening. Each of the machines now in use turns out 300 perfect pins a minute, and one man with the assistance of one or two boys can attend to ten or twelve machines. Twenty-five tons of pins are produced on an average every week. One house in Birmingham turns about three tons of brass wire into pins each week. Altogether more than twenty houses are engaged in this trade.

Sheffield Notes.

From Our Correspondent.

THE Hall-marking question has now been annexed by the party politicians who have been pelting each other with it vigorously for the last few weeks. I need scarcely say that this aspect of the question is not likely to interest manufacturers who look at the matter from a practical point of view. They may, however, find some amount of amusement in contemplating the attitude now assumed by the Sheffield press with reference to the controversy. In old books upon America one reads about the inalienable right of each free-born citizen to wallop his own nigger. But the glorious privilege of being able to cheat your neighbour is not much better; and this is practically the position taken up by the *Sheffield and Rotherham Independent*, which has now definitely gone in for the abolition of compulsory Hall-marking. The conductors of this journal are usually tolerably clear-sighted in trade matters, but that they have missed their way on this subject every silversmith in Sheffield knows. A rumour is current in the trade to the effect that Mr. Watherston is going to put up for one of the divisions of the borough at the next general election, which clearly shows that even in these days of improved trade business men have time to joke.

Certain figures contained in the report of the Royal Commission on Depression of Trade tend to show, not only that the silver trade is by no means a decaying industry, but that it is gradually gravitating to Sheffield as a centre. The silver assayed in the two Halls of London and Sheffield shows an increase of not less than 256,312 ounces in the assay of 1885 over that of 1870. The figures for the former year are as follows:—

In London	117,096 ounces.
In Sheffield	893,243 „
Total ...	1,010,339 „

These figures are so enormously in favour of Sheffield (especially when it is borne in mind that a good deal of the silver marked in London is manufactured in Sheffield) as to lead some to doubt their accuracy. But in conversation with a practical silversmith the other day it was pointed out to me that the goods usually manufactured in London are of a lighter—perhaps more artistic—kind, while those made in Sheffield are of a more solid, every-day character, such as tea and coffee sets, waiters, and particularly spoons and forks, where the weight in proportion to the amount of labour expended is much greater than in London-made articles. But apart from statistics one has only to open one's eyes in going about the town to note how old factories have been enlarged and re-built, and how new firms have sprung into existence of late years, to form some idea of the enormous development of the trade in Sheffield.

The annual conversazione and exhibition connected with the School of Art, was held this year in the beautiful building in Weston Park, and proved in every way a great success. The chair was occupied by Dr. Sorby, President of the Council; while the Archbishop of York distributed the prizes to the successful students and delivered the annual address. For a good many years the School of Art used to be considered the only respectable thing of a public character which Sheffield possessed. We have other things to boast of now, and perhaps the School of Art has not quite maintained its relative position of pre-eminence—but it is still doing a good work for all that. Many a middle-aged man in the town retains kindly memories of the old building in Arundel Street, and of the jovial, and in many cases, talented crew who gathered within its walls. Godfrey Sykes, who was head-master more years ago than I care to name, had a wonderful influence over the young men of the town; and every silversmith's apprentice of the time was raving about high art. When he ultimately went to South Kensington he took some half-a-dozen of the more promising students with him, and there for years they modelled and decorated, until a sudden fit of economy seized the government of the day and the supplies were stopped. Godfrey Sykes having in the meantime worked himself to death, the band was broken up and scattered to the four winds, and the influence of the Sheffield School of Art was thus carried to many a town hundreds of miles away from the ancient capital of Hallumshire.

Talking of Godfrey Sykes reminds me that he was one of the very few men who thoroughly appreciated the picturesque aspect of Sheffield street scenery. Sheffielders, especially travelled Sheffielders, are never tired of saying sadly that Sheffield is not a beautiful town. But the numerous "bits" in water colour and oils which Sykes left behind him, shows how much there was to be seen if one had only an eye to see it. It is a lasting disgrace to the philistinism of the town that this most interesting collection was allowed to slip through our fingers. What an acquisition it would now be to our Mappin Art Gallery in Weston Park.

From electro-plate to the electric light is not so very far a cry as appears on the surface. Anyway the electric light is making headway in Sheffield. For some time past brush lamps both inside and outside the larger shops have been common enough, but the first extensive contract for the lighting of large premises throughout with the incandescent lamp has just been entered into by the Sheffield Electric Light Supply Company. The beautiful block of buildings rapidly approaching completion in Fargate, and which will be occupied partly by the Yorkshire Penny Bank and partly by the Sheffield Café Company as a first-class temperance hotel is to be lighted throughout by incandescent lamps. Every room, corridor and staircase in these extensive premises will have the new light "laid on." Although more expensive than gas in the first instance, the electric light possesses many advantages over its rival. There is no risk of explosion, no smell and no vibration of the atmosphere. This last means no damage to pictures or furniture, which goes a long way towards annihilating the increased initial cost. In point of fact this may be saved in the case of some large business establishments, in whitewash, paint, and preservation of stock. The manipulation of the incandescent lamp is simplicity itself. You turn what appears like an ordinary gas tap and the light flashes forth. Matches will be of no use to anyone in the establishment but the smoker and the kitchen-maid who lights the fires.

The development of the electric light and the telephone systems, which in Sheffield are worked by the same company, is likely to have one very important effect on the silver trade. That is the education of a body of men who thoroughly understand the working of batteries. There is a great deal of rule of thumb business in the ordinary plating shop, and the uncertainty of the results achieved there is largely owing to want of technical knowledge on the part of managers. There is one very large firm in Sheffield who are said to have dismissed six platers in less than eight months. I mentioned this fact casually the other day to an official of the Sheffield Electric Light Company, who at once asked if any change had been made in the arrangement or equipment of the batteries about the time when the first failure occurred. I could not tell him; but from what he said I could see that it was quite possible that the poor men had been punished for the incompetency of people higher in authority than themselves.

The plate manufacturers have at last spoken in their corporate capacity. A meeting convened by circulars, and in which every firm in town was represented, has been held in the Cutlers' Hall, to consider the proposed abolition of the plate duties and the abolition of compulsory hall-marking. Mr. Ebenezer Hall, of the firm of Martin and Hall, presided over the meeting, which was not open to the press. Everyone was thus able to speak his mind freely, a privilege which was fully taken advantage of. Mr. Charles Belk produced a draft memorandum of a proposed memorial to the Chancellor of the Exchequer on the subject. The meeting unanimously decided to make a strong representation to Mr. Goschen against the abolition of compulsory hall-marking. With regard to the duties, however, a more protracted discussion took place, the whole matter evidently hinging upon the possibility of dealing in a satisfactory manner with the question of the drawback. Ultimately, upon this part of the subject the meeting was found to be nearly equally divided, a slight majority being in favour of maintaining the *status quo*. This is a result which I have endeavoured to set forth in these notes for months past, being gathered from the expressed opinions of individual manufacturers. Now, however, that they have spoken as a body, the question may be considered settled, for it is inconceivable that any Chancellor of the Exchequer will oppose the strongly-expressed views of such a meeting as that held at the Cutlers' Hall.

Midland Jottings.

By J. W. Robertson-Scott.

It is not often that the local press prints in a month so much affecting the trades represented by this journal.

Following up the Association's big "do," at which Mr. Chamberlain and Mr. Powell Williams spoke well-reported speeches, there have been special articles on hall-marking, and the "letters to the editor" of Messrs. B. H. Joseph, "Hall-mark," and E. J. Watherston.

Then a "well-dressed man," a Mr. William Bashton, got some eighty-seven pounds' worth of jewellery of Mr. R. C. Marsh, of High Street, on appro., and promptly pawned it.

Upon the inadvertent poisoning of the late Mr. Charles S. Fletcher, a Birmingham jeweller, in the University College Hospital, London, by a wrongly given dose of cocaine, the local papers have strongly expressed themselves, and suggested that the matter demands further investigation.

On Feb. 12th, the *Post*, *à propos* of the breaking of the windows of Mr. Davis, of Livery Street, and the abstraction of rings to the value of about £50, along with Mr. Bashford's exploit, humorously offered the consolation to the jewellers, that whatever the vagaries of the public taste in the way of the wearing of jewellery, property of this description is still held in the high esteem of Mr. William Sikes and his friends.

The mysterious absence of Mr. Bishton is also a matter of press and private speculation. At present, however, it is perhaps well not to set down anything more than that everyone is asking "Where's Bishton?" By next month the question will be answered, and certain explanations be made.

The following story of ingenious thieving by a working jeweller is told in one of our daily papers. Of course, the *modus operandi* is ancient enough. The offender was repeatedly found to be somewhat deficient when weighing in his work. Almost endless stratagems were resorted to in order to find out what he really did with the missing gold. A permanent watch was kept on him, but the mystery remained a mystery still, and the deficiency continued. At last the problem was solved. The man had rather a bushy head of hair, and he occasionally ran his fingers through it. This in itself seemed innocent enough, but it was the key to the secret. In the ordinary course of events he should have brushed the gold dust off his hands with a specially prepared brush, and accounted for the metal, but the effect of pushing his fingers through his hair may be readily guessed. On washing his head the metal would, of course, go to the bottom of the water and be easily collected. In the East the long-haired natives are specially adept in this way.

Another local gossip is responsible for a second jewellery trade anecdote. A bankrupt jeweller had been going through his examination before the Registrar. Upon the conclusion of the proceedings the ire of the creditors was exhibited. They were so infuriated against the unfortunate (?) that when he came out of the court they gathered in a body round him and began to hustle him about. One excited gentleman whirled his umbrella round the head of the unhappy debtor, and another invited him into the street that he might take the amount of his debt out of his skin. As they approached the door a man on one side of the debtor roared out "liar"—one on the other side responded "thief." "Liar" shouted the man on the left. "thief" responded the man on the right. So they continued with their target up the street. It ended, it is said, in a struggle at last, and there was some talk that police court proceedings would follow.

"Quiet, but nothing to complain of" is the answer one gets in reply to the question as to how trade goes among the jewellers and goldsmiths.

It is surely refreshing to know, when so many old-time beliefs have gone by the board, that the tradition that during Lent there is always little doing, is holding good this year.

Like Mr. Matthew Arnold's miracles, the belief in question may be traced to perfectly natural causes. By the time Lent comes round the retail shops' custom falls off, for the reason that people whose jewellery "consuming" powers have not been wholly exhausted by the buying of Christmas gifts, have already made such purchases as the opening of the season demands.

I hear that diamond work is going about very well just now.

Also, that there is an increasing disposition to employ in ornaments opal, moonstone, and coloured stones in general.

I am told, too, that the rage that there is in Paris at present for enamelled work seems likely to extend to England, to the extent at least of making this beautiful and attractive kind of decoration more and more popular.

Amongst watchmakers, trade is quiet again after the late spurt.

A good few of the Prescot Company's prospectuses seem to have been addressed to Birmingham manufacturers.

The manufacturer who prophesied to me that the Coventry people would set up movement machinery for themselves, called my attention to the fact, when I saw him this month, that his prognostication was being fulfilled.

Further, he ventured upon another bit of prophecy, which I give upon his authority. It is this. He believes that both companies may very possibly be a failure. Each company is, he says, making a risky experiment. The present companies will gain, at a financial loss, the necessary experience, and their successors will profit by it.

Of course there is no reason why we should not manufacture watches as cheaply as any foreign corporation, provided always that ——. Of course. But will the saving clause be sufficiently recognised?

The notion that never have there been times so bad as we are at the moment experiencing, is the failing of no particular class or period. This *à propos* of the complaints that are heard in the watch trade. Of course many of the people in it are old enough to remember, say, the bad spell in '75 and other periods, when, in the phrase of a certain comic opera at whose production I once "assisted," but which never got beyond its first six nights, "in times like that present, things that are pleasant were few and far between."

It may be news to the younger men, however, to learn that as early as 1857 the Birmingham watchmakers, driven hard by low prices, had to go in for what they call in America a "combine." In that year the trade foregathered at a meeting held in no less a place than the Committee room of the Town Hall.

Here is the stated object of this "general meeting of master watch and clock makers:"—To take into consideration the present rates of Charge for the Cleaning and Repairing of Clocks, which are so low as to prove, not only utterly unremunerative, both to Employer and Employed, but also to tend to degrade the workmen in character, habits and mechanical ability, by reason of comparative indigence in which it drives them and their families to live, and to decide upon a List of Prices to be observed throughout the trade, which should enable the employers to pay their men a fair wage, to derive a fair trade profit upon this branch of their business, and to execute their orders in a manner alike creditable to themselves and satisfactory to their customers.

I transcribe the decided upon Prices for Cleaning, with (in brackets) an estimate as to the probable present charges.

	s.	*d.*	
Eight-day clock	3	6	
Eight-day spring timepiece	3	6	(2/6)
Eight-day bracket clock	5	0	(3/6)
French spring clock	5	0	(4/0)
French spring timepiece	2	6	(2/0)
Thirty-hour clock (English)	2	6	
Half quarter clock	7	6	
Full quarter clock	10	0	
Chime clock	15	0	
American eight-day clock	3	0	(1/6)
American thirty-hour clock	2	0	(1/0)
American small thirty-hour clock ...	1	6	(1/0)
Dutch weight clock	1	6	(1/0)
German spring clock	3	6	(1/6)
German spring timepiece	2	0	(1/0)

The broadside containing the foregoing information, which Mr. Haseler (Haseler & Son) has kindly lent me, contains the intimation that "all distances above one mile will be charged at 6d. per mile." But, like not a few good resolutions before and since, their authors did not stand long by them.

Copper.

ONE of the disturbing elements in the metal-working business seems at last in a fair way of being got rid of.

The contracts with copper mines and the financial arrangements connected with the new phase on which the copper combination has entered, are now believed to be almost complete. A large English copper bank or copper trust has, we understand, been practically formed in London, which has undertaken to extend the contracts made with the chief copper mines of the world for a period of twelve years. The mining companies on their side will have the guarantee of this new copper bank with a large capital, and they seem to be satisfied with the arrangements.

Had not something of the kind been done, one of two things must have happened, says a writer in the *Daily News*. Either the French syndicate would have gone on with the matter, with the risk of a breakdown in two or three years, and of considerable mismanagement like that which promoted speculation last year, and raised the price of copper above £100 per ton; or, in the alternative, the French capitalists would have grown sick of the entire business, and thrown copper on the market in a deluge, which would have been bad for those who buy copper in advance and consume it in the manufacture of engines and machinery—bad for the many millions of British capital invested in copper mines, and good chiefly for "bear" speculators. What has been arranged seems to be this: the new copper bank is to be responsible for the carrying out of contracts for twelve years for fixed amounts at fixed prices, and proposes to so regulate the price of copper that a profit shall be afforded the producers, while smelters and those who are compelled to make contracts for the supply of copper for machinery, &c., will be perhaps able to rely upon a steady market for the metal for a long period of years. Last year "bears" of copper were severely punished by the high prices which were touched for a time, and in the nature of bears they howled. Their agitation against the French syndicate has had this good effect, viz.:—That the consequent inflation and wild fluctuations have been condemned by public opinion. The new bank, or trust, or whatever it may be called, will have learned from this experience that excessive prices and fluctuating markets are best avoided. Copper is to be kept comparatively steady at something between £65 and £85 per ton. Unless this new combination had stepped in there might have been an ugly fall and continued disturbance in the copper market, only to be followed by a new and perhaps ill-regulated combination on the model of the French syndicate, which will of course be lucky to have got out of the muddle on the terms now arranged. How the difficulty of accumulated stocks is to be surmounted it is difficult to guess. Had not the French syndicate required the aid of English capital the new agreement would hardly have been made.

The French Crown Jewels.—The money realised by the sale of the Crown Jewels, amounting to £280,000, forms a surplus in the hands of the Government, which it is proposed to distribute as follows:—£80,000 for a Museum Fund; £80,000 for the Rebuilding of the National School of Decorative Art; £80,000 for Technical Education; and £40,000 in subventions to Working Men's Friendly Societies.

Modern Watch Dials.—Watchmakers can sometimes learn something of their business from outside sources. To that end we give the following for what it is worth from *Engineering:* Wherever watches are made by hand, the enamelled copper which serves as a dial is carefully painted with the figures and divisions by very small camel's hair brushes; and the laying on of the pigment is purely a matter of skill, in which the delicacy of the human hand and vision, aided by suitable magnifying glasses, enable the divisions to be painted with wonderful accuracy, and the names to be added in letters of almost microscopical size. The dials of the modern machine-made watch are just as delicate and elaborate, and are produced very rapidly by mechanical processes which enable the pigment to be transferred from an engraved plate to the blank watch dial. First a steel plate is engraved with the various figures and lines which are desired on the watch dial, and then a copy is taken of this steel plate by a wax matrix, on which copper is deposited by the electrotype process: the copper electrotype on being removed is a duplicate of the first engraved plate. The pigment is laid on this copper electrotype, ready for the colouring matter remaining in the depression, similar to the original method of copper or steel-plate printing. Then a thin coat of collodion is laid on the copper, and evenly distributed by the centrifugal force, when the copper is revolved. A piece of paper being laid upon the collodion before it is entirely dry adheres to it, and on removing the paper it brings the collodion with it, and the pigment, adhering to the collodion, furnishes a negative of the engraving on the paper. This paper is then laid upon a blank watch dial and slowly pressed upon it, and then placed in a furnace, where the heat destroys the paper and the collodion, and causes the pigment to penetrate the enamel. In this manner the most delicate and elaborate markings can be readily transferred to watch dials, various colours being used when desired. This work, however, is financially applicable only where large quantities of watches are made in uniform manner, and there is still a demand for the delicate artistic work necessary for painting and marking watch dials. The very cheap watches which are advertised so generally for children's use, have dials made by printing on enamelled paper in large quantities, and they are cut out to suit.

The Failure of Messrs. Brown, Sheffield.

ADJOURNED EXAMINATION.

At the Sheffield County Court on Jan. 31, before his Honour Judge Ellison, the public examination of Henry Joseph Brown and Edward Francis Brown, trading as William Brown, jeweller, High Street, Sheffield, was resumed. Mr. Neal appeared for the trustee; Mr. Binney for Edward, and Mr. Ashington for Henry.

Henry Joseph Brown, in answer to the Official Receiver, said he had made gifts out of the shop in his private capacity, and not as the firm, because he thought it would be all right if he charged them to his private account.

The Official Receiver pointed out that in the account these gifts were simply entered as "gifts to somebody."—The Debtor said that was eight years ago.

The Official Receiver: But the same thing happened in 1887, though not to so great an extent.

The Debtor, in answer to further questions, said he had pawned watches out of the shop. He did not know whether all those watches had been paid for or not.

The Official Receiver: Did you take any steps to ascertain whether those goods had been paid for or not?—The Debtor: I can simply answer the question in this form.

The Official Receiver: Did you take any steps to ascertain whether they were paid for or not—yes or no?—The Debtor: We had £1,350 worth of watches in stock, and we did not owe £350 for watches, as the balance sheet shows.—On being pressed, he admitted that he did not take any steps to ascertain whether the goods were paid for or not.

By Mr. Neal: He had settled private accounts with goods out of the shop.

By Mr. Ashington: Some goods were pawned by him and some by his brother, and all were entered in the firm's books.

Mr. Ashington: Did you know the things had not been paid for?

His Honour: The Act of Parliament says the bankrupts are bound to know whether they are paid for. If a person deliberately shuts his eyes, of course, he does not see.

Mr. Ashington said the question might come as to whether there was intent or not.

The Official Receiver: Debtor's answer won't affect that.

His Honour: It will not. There is a stringent penalty attached to a bankrupt pawning goods not paid for.

Mr. Ashington: There is the question of intent.

The Official Receiver: That is a question for a jury, and all the talking of the bankrupt won't answer it at all.

Mr. Ashington: We won't be able to talk there, and therefore we want to talk here.

The Debtor, in answer to Mr. Ashington, said that certain goods mentioned had most assuredly been paid for. It was only on examination of the current bills and tracing them back to the ledger that they could tell whether they had been paid for. They had about £500 worth of paid for goods in stock, which would have been much more eligible for pawning than the unpaid goods.

By the Official Receiver: He would undertake that according to the ledger everything disposed of had been paid for except four items. He did not look at the ledger at the times of disposal to see if the goods were paid for; but he took care to take old stock if it was possible. If he took new it was inadvertently By old stock he meant stock four or five years old.

The Official Receiver: Why, the very first item you speak about, a ring pawned in April, 1888, was bought in Sept., 1887.

Mr. Ashington was endeavouring to give some explanation of the answers of the bankrupt, when the Official Receiver objected to Mr. Ashington making statements which would appear in the shorthand notes laid before the Sessions. It was the bankrupt's answers only should appear.

His Honour said he did not find from the Act of Parliament that a solicitor had any right to appear for a bankrupt in a public examination. All the other parties having a right to take part were mentioned, but there was not a word of a solicitor having a right to appear for the bankrupt. He mentioned this because the line of conduct taken by Mr. Ashington was such as he had not known taken by a solicitor—the particular line of examination. He was of opinion that no solicitor had a right to appear for the bankrupt. The bankrupt had to answer for himself.

Mr. Ashington said he, perhaps, was not so well acquainted with the Act as his Honour, in whose hands he was; but he understood that the Court could allow questions to be put to the bankrupt. He craved his Honour's permission to appear on sufferance.

His Honour did not think the questions allowed to be put to the bankrupt were questions by a solicitor appearing for the bankrupt. The bankrupt was under personal examination.

The Official Receiver, in answer to a remark by Mr. Ashington that creditors could be represented by a solicitor, said that if the creditor was so represented he had to give the solicitor an authority.

Mr. Ashington urged that it was within the discretion of the Court to allow the questions to be put. The drift of the examination in this case was to make the bankrupt incriminate himself in order to get evidence for a future criminal examination.

His Honour: Suppose it is so, it is the Legislature that has done it.

Mr. Ashington: The Legislature has not forbidden a solicitor to appear for the bankrupt if the Court think fit.

Some discussion followed, and the Official Receiver said the solicitor might appear for a bankrupt as a favour, but not as a matter of right; but he (the Official Receiver) never objected to a solicitor appearing.

His Honour said that if a solicitor appeared it was by permission of the Court.

The Debtor, in answer to Mr. Neal, said he had not given up any personal jewellery to the trustee except a ring. He had not worn a watch and chain for a couple of years. He had not worn one of his own, but had occasionally put one in his pocket. He had not given his wife anything recently. He pledged his own watch two years ago, and had told the Official Receiver about it.

The Official Receiver said he did not know whether the bankrupt ought to be allowed to pass.

His Honour said he really did not know much about it, and perhaps it was a matter for the Official Receiver. If it was thought anything more could be got out of the bankrupt they might adjourn; but if he had given all he could then he might pass.

Mr. Ashington thought the debtor had been put through a close and searching examination.

The Official Receiver suggested they hear Edward Brown, and then decide on both of them.

Edward Brown said that he had partly kept the books. They were open to his brother to examine, and sometimes he looked at them. There were balance sheets of the business for two years, but none since, because his brother objected to them. Mr. Hubert Smith examined their books after those sheets were prepared, and he verbally reported that they (the firm) would have to "pull up." When Henry was told this he said that he (Edward) wanted to turn him out of the business, and that he would not allow balance sheets.

The Official Receiver: Why did you not insist on its being done?—The Debtor: I ought to have done, but we quarrelled about it.

The Official Receiver: That is four or five years ago, and you have not had a balance since.—The Debtor believed they had one in 1885, but he did not know where it was. He pawned one lot of goods in February, 1888, for £40. Those goods had been paid for. Other goods pawned were not pawned with his consent, and he did not know that they had been pawned until he came to balance up at night. He received £100 a year less than his brother; there was no deed of partnership, and they drew what they thought fit. They first knew they were insolvent in March or May of last year. They never took any particular means to ascertain.

The Official Receiver said he did not see they could do any good by adjourning. The conduct of the first bankrupt was very unsatisfactory; but his Honour would deal with that on another day.

Both bankrupts were then allowed to pass.

The Bankruptcy of J. & F. Bromage.

AT the Birmingham County Court, on February 16th, before Mr. Registrar Parry, the adjourned public examination in the bankruptcy matter of J. and F. Bromage, formerly carrying on business in Birmingham as jewellers, was resumed.

On Friday, February 8th, the examination of Frederick Bromage, the junior partner, took place; but Joseph Bromage, whose examination had commenced at a previous sitting, was taken ill as soon as he reached the court, and the continuation of his examination had to be postponed till the 16th, when Mr. Registrar Parry held a special sitting for the purpose. The bankrupt was allowed to sit during his examination. The trustee (Mr. J. W. G. Hill) was represented by Mr. Alfred Young (instructed by Mr. Fitter), and Mr. Stubbins (instructed by Mr. J. Harris) appeared for the bankrupts.

In reply to the Official Receiver, the bankrupt, Joseph Bromage, said that his firm had pawned goods monthly from June, 1886; altogether forty-seven lots were pawned. One, or perhaps two lots were redeemed. They began to pledge goods because they were pressed for money. They did not then ascertain what their position was. They had a very large stock, but he did not know what they owed. He could not say whether the account prepared by Mr. Sharp from the copy invoices sent in to the Official Receiver was correct. The account showed that they had purchased, from October, 1886, to May, 1887, goods to the amount of £1,600. He thought it was better to pawn goods in the hope of redeeming them than sell them at a sacrifice when pressed. At the latter end of 1886 they thought they were solvent. He admitted the destruction of the balance-sheet which was prepared at the end of 1884, but could not say how it was destroyed.

Mr. Young then examined the bankrupt with reference to special pawnings of certain articles. The first was a bracelet of a pattern called Abrahall's, which the trustee had redeemed. The bankrupt looked at the bracelet, but could not say where he bought it from. It was not his own make. On the 15th of April, 1887, he pawned 117 gold brooches, 66 gold scarf-pins, 48 pairs of earrings, and other jewellery, for £130. He didn't know whether he obtained them from Dick or not, but he thought not. On similar items in Dick's day-book being pointed out to him under the date April 13, 1887, the bankrupt said he could not remember whether they were the same goods or not. His own firm were in the habit of manufacturing some of these classes of goods.

In reply to the Registrar, Mr. Young said that most of the pawned goods had been sold by the pawnbroker owing to the time having run out. Some specimens, however, had been recovered by the trustee. Other pawn-tickets, with entries of similar goods in Dick's books on approximate dates, were submitted to the bankrupt; but in every case he stated that he could not remember whether or not they referred to the same articles. In one case there had been pledgings to the amount of £710. These the bankrupt said he believed were not obtained from Dick. He (the bankrupt) had not pawned for "Mr. Bernard" any goods that the firm had sold to him. The first pawning transaction for "a friend" was on February 21st, 1887. The "friend" was Mr. Bernard.

Mr. Young read an entry in Dick's book of sales of jewellery to the Bromages to large amounts, extending from March 21st to May 13th, 1887. The bankrupt said that he supposed the entries were accurate, but he could not swear whether they were right or wrong. His firm did not keep a purchase ledger. During that same period the bankrupt said, judging from the pawn-tickets submitted to him, he had pledged goods of a similar character to the amount of £532. The purchases from Dick during this period amounted to about £2,430. The total amount of the finished stock on Bromages' premises at the time of the petition was valued by the trustee at £286 16s. 7d. Some of the brooches produced appeared to have been made from Randell's stampings, but bankrupt could not say that they were made by his firm. Other houses in the trade used these stampings.

By Mr. Stubbins: All the stampings of Randell's the bankrupts had in stock, to the value of about £100, were given back to Randell just before the private meeting. The goods bought from Dick were paid for by bills, some of which had come back dishonoured. The goods of Dick's that had been pawned were purchased *bonâ fide*.

This concluded the public examination of the Bromages, but it was arranged that the matter should be kept open until after the examination in Dick's case. The date of Dick's examination was left for future arrangement.

The Affairs of Bishton and Fletcher.

A PETITION TO BE FILED.

ANOTHER meeting of the creditors of Alfred Bishton (trading as Bishton and Fletcher), manufacturing jeweller, Albion Street, Birmingham, was held on the 20th ult., at the Grand Hotel.

It will be remembered that the first meeting in the matter took place on the 8th ult., having been convened by Mr. Joseph Rowlands, the debtor's solicitor, and being held at his offices. To that meeting Mr. Rowlands stated that on January 22 Mr. Bishton called upon him and announced his intention of going abroad. He had advised Mr. Bishton to appoint someone to act for him as if he were present, and, accepting that advice, the debtor had appointed Mr. E. J. Abbott, accountant, of Colmore Row, to represent him under a power of attorney.

Mr. Abbott read to the meeting a rough statement of affairs, from which it appeared that the total liabilities were computed at £21,827 16s. 11d., and the total assets at £15,009 1s.; and a resolution was thereupon submitted that Mr. Abbott should be requested by the creditors present to act as trustee of the estate, empowered to do so by a declaration of trust, which, it was suggested, should be approved by a solicitor on behalf of creditors.

Present at the meeting were Mr. Allen Edwards and Mr. S. J. Power, as representing certain creditors who were members of the Birmingham Jewellers' and Silversmiths' Association, and they stated that it was the rule of the association never to assent to any private arrangement, whether effected by composition or liquidation, unless it granted an investigation by the association. They held out no hope, moreover, that the rule would be departed from in the present instance. The meeting afforded no facilities for any such investigation, but when the resolution was put to the meeting a large proportion of the creditors present abstained from voting. At the same time it was objected that only two-and-a-half days' notice of the meeting had been given, and that but a few of the creditors had been summoned to attend it.

On the 13th ult., Councillor Davis, the chairman of the meeting, called the same creditors together again at the Grand Hotel for the following day. At that meeting Mr. J. M. Banks, the vice-chairman of the Jewellers' Association, protested against the shortness of the notice—less than twenty-four hours, he said—and against the course taken in excluding many creditors, one of whom, a member of the association, had a claim on the estate for more than £280. Thereupon it was resolved that a further meeting should be held, to which creditors to the amount of £10 and upwards should be summoned. This was the meeting which took place on the 20th ult. Councillor Davis again presided, and large body of creditors was in attendance. Mr. Rowlands and Mr. Abbott represented the debtor, while creditors were represented by Messrs. Allen Edwards, J. R. Holliday, R. A. Pinsent, S. J. Power, A. J. O'Connor, E. Jaques, and Poppleton.

Mr. Rowlands again stated the circumstances of his interview with the debtor prior to that person's departure, and of the execution of the power of attorney. He added that upon an examination of the debtor's books being made it was at once seen that there would be a difficulty about paying 20s. in the pound. He had convened the present and the previous meetings with a view to give creditors an early opportunity of determining what should be done, being desirous of realising immediately, so that they should get a good dividend.

After some discussion, Councillor Charles Green, the chairman of the Jewellers' Association, asked Mr. Rowlands if he had the power of attorney with him. He answered that he had not, but that he had a copy of it. Asked thereupon if he would allow Mr. Power, the solicitor to the association, to inspect the power of attorney, he declined to do so. He was then desired to give some further particulars as to the circumstances under which the debtor left the country, and as to certain bills which were alleged to have been forged. He replied that the creditors, in his opinion, were not likely to advance their interest by asking such questions, and that the reasons which induced the debtor to take the course of running away were good and sufficient reasons from his (the debtor's) point of view.

In the course of the proceedings, Mr. Abbott read a revised statement of affairs, which showed that the debts are now estimated at £25,104 9s. 2d., and the assets at £15,461 1s. 4d. It will be observed that both are larger, but that the estimate of the debts has increased much more largely than that of the assets. The latter consists of stock (net cost), £4,039 1s. 1d.; unfinished stock, £38 15s. 8d.; stones, £1,509 13s. 6d; gold, £258 7s. 5d.; tools, fixtures, &c., £448 8s. 5d.; book-debts (gross), £9,165 15s. 3d. The liabilities include £11,700 on bills, £9,900 to unsecured creditors, and £3,400 to creditors whose securities cover only a portion of their claims, which are considerably in excess of that sum.

In reply to a further question, Mr. Rowlands explained that only creditors of £400 and upwards were invited to the previous meetings. It was stated in contravention of this, that, as a matter of fact, two creditors for £200 and £210 respectively took part in the proceedings. Mr. Abbott also said it was true that he had heard of certain bills which bore the name of Mr. Haddock, the debtor's father-in-law, being repudiated by that gentleman.

A long discussion followed, in which it was urged on the one side that no useful purpose could be served by preventing a private arrangement, and rejoined on the other hand, that the refusal of an inspection of the power of attorney, and the attitude generally maintained by the debtor's representatives, was incompatible with such an arrangement being agreed to. Among other difficulties commented upon in this relation was the fact that a list of creditors had not been forthcoming, although creditors to the amount of £5,500 had asked for it. Councillor Green declared moreover, that the affairs of Bishton and Fletcher ought on public grounds to see the light of day. Indeed he regarded the case as one of the worst which had disfigured the history of the trade, and he saw no reason whatever why the whole matter should not be exposed.

In the course of discussion several resolutions were proposed, and among them was one which would have appointed Mr. Abbott and Mr. Allen Edwards to act as trustees in a liquidation by private arrangement. There were many creditors, however who did not conceal their opinion that it would be impossible to liquidate the estate out of bankruptcy, inasmuch as several writs had already been served for claims which could not be met without undue preference. A resolution was ultimately submitted in favour of winding-up the estate in bankruptcy, and was voted for by four creditors and opposed by three. The meeting broke up in some confusion, with the understanding that in any case the affair must go into bankruptcy.

National Association of "Jobbers" in American Watches.

Interview with Mr. Secretary Noyes.

AFTER the annual meeting of the above Association, the New York correspondent of an American contemporary called on the Secretary, Mr. J. H. Noyes, and interviewed him in respect to some of the most important questions of the trade in the States. The dialogue, which includes many points of interest to our readers, was as follows:—

"When you came together, was there much diversity of opinion developed?"—"None at all. We had a very harmonious meeting."

"I see from your own report that the principal business was a re-arrangement of the relations between the jobbers and the manufacturers. You say: 'The resolutions which had been adopted by an informal conference of jobbers on the preceding day were then read, and, being afterwards read by sections, were adopted, with some modifications, etc.' What were those resolutions?"—"I couldn't give them to you. They are confidential. Some of them were rejected. We finally arrived at a complete understanding with the manufacturers."

"What about the movement rule, requiring movements and cases to be sold in equal numbers?"—"That was fired out."

"Was this a concession to Dueber?"—"Oh, no; we are not thinking of Dueber at all. We let him go anywhere he likes. We can't pay any attention to him. Life is too short. The country is big enough for us all. If he wants to monkey, I suppose he has a right to."

"Why was the rule repealed?"—"The jobbers felt that it was rather inconvenient, and there was some sentiment against it among retailers; and so they concluded: 'Well, on the whole, I guess we'll let her go.' If we don't want to sell movements without cases, we needn't, whether there is any rule or not."

"What did the jobbers say about the amount of business they had done during the year?"—"They didn't say much about it, except, perhaps, in conversation. I guess everybody did about the same as in previous years—some a little more and some a little less. I think the average was about the same. One dealer expressed himself as very agreeably surprised to find that his profits were fully as good as in preceding years—that his business was, if anything, a little larger."

"What about the application of one watch-case manufacturing company to be admitted as jobbers?"—"The application was refused. I don't think they expected to be admitted. In fact, I don't think they made application with the idea of being admitted; it was only to bring a certain point up for discussion, and see what the sentiment would be in regard to it. I don't know whether they accomplished their purpose or not."

"What is the feeling of the jobbers regarding the rumoured tendency of manufacturers to squeeze them out and deal directly with retailers?"—"The jobbers feel that that matter has been tested, and for the present their position is secure. No large manufacturer has any desire to crowd the jobber out. Manufacturers recognise the need of a special class between them and the retail trade. They don't think they could market their goods themselves as readily or as cheaply as they can through jobbers. It requires too large a capital, and, then, of course, the expense of marketing one line is almost as great as the jobber incurs in marketing a dozen."

"Was anything said about the competition of notion houses?"—"No; that matter wasn't brought up at all."

"Are the cheap watch manufacturers becoming more disposed to fall into line with you?"—"Yes; the Trenton Watch Company, I believe, expect to join us very soon. Their selling direct to the retailer was only because their goods were not fully introduced. They wanted to get them into the hands of the retailers to create a market for them. The Cheshire, I guess, have only sold to jobbers from the beginning. The Waterbury people have tried the notion trade pretty thoroughly. On their present basis they can co-operate with us if they want to; but they don't care about us, they say."

"Was anything done regarding the gold-case trade?"—"The jobbers would like to include gold cases, but they can't see their way to it at present. They would like to include gold on two accounts. They want to have prices established more definitely and stably, so that they would know where they were from day to day or month to month. And then they would like to have some way of controlling the quality, so as to guarantee the dealer. But the way doesn't seem to be opened just yet. As it is now, the quality is all kinds, and prices are everywhere. There doesn't seem to be any standard of prices, or of quality either for that matter."

"Has anything been done toward the introduction of a stamp similar to the English hall-mark?"—"I wish we could get something of that kind; but there is a difference of opinion as to whether it is constitutional or not. We had a bill before Congress, and it was abandoned on that ground."

"There has been some talk of the manufacturers combining to adopt a stamp. Why don't they go ahead?"—"They are too jealous of each other. For instance, our friend, Mr. Dueber, says his stamp is just as good as any contract stamp. He won't take the position that his stamp is of any less value than anybody else's. And then Mr. Dueber is apt to say: 'Well, if my reputation isn't good enough, nobody's is good.' So you have variations all around. If an agreement on the subject could be made and kept, I think it would be a good thing. Now, nobody knows what the quality of gold is until it is assayed; and the man who makes ten-carat cases and stamps them fourteen, can undersell the man who makes an honest case."

"Why is it so much easier to secure co-operation among silver-case makers than gold?"—"Because there are not so many of them. More machinery is required to start the business, which is a great deal larger; hence there is less temptation to go into it."

"Have you any agreement as to the quality of silver."—"We don't need any. Nobody asks anything about the quality of silver. You can't debase it enough to make it an object. It is all supposed to be coin, and I guess it is. I don't think anybody reduces the value of silver."

As the interviewer was about to leave, Mr. Noyes asked if he had interviewed the Dueber Company lately. He said he had done so a month ago, and that they seemed to think their controversy with the Jobbers' Association had about died out. Said the Secretary: "I guess it has. They have been treating us more decently, and have kept quiet lately."

Coventry and the Watch Trade.

THE first annual meeting of the Coventry Watch Trade Association was held on the 4th ult., at the Hen and Chickens Hotel, in that city, under the presidency of Mr. Councillor Newsome. The report stated that there were 266 members, and the trade was congratulated on the great improvement that had taken place in the business during the past year, due mainly, it was thought, to the operation of the Merchandise Marks Act. The work of the association was to watch the working of that measure, and some prosecutions had been entered upon. The funds wers reported to be in good condition, and it was mentioned that Mr. Balantine, M.P., had sent a donation of £5. The chairman, in moving the adoption of the report, declared that the Act of 1887 had been of enormous benefit to the trade; his own business had increased, as had that of other local manufacturers. Many shopkeepers thought a few years ago that they would never want English watches again, and they cultivated the Swiss and American trade, because of the greater profits; but such people had now large English stocks; and, what was more, they had on hand lots of foreign watches which were decidedly the worse for keeping—(laughter). He appealed for more members, so that prosecutions for infringement of the Act could be entered upon when necessary. The report was adopted.

The Lancashire Watch Company.

THE *Prescot Reporter*, in publishing the prospectus of the proposed watch factory at Prescot, says:—The inception of the movement is bound up with the passing of the Merchandise Marks Act, 1887. When Mr. Forwood was at Prescot, securing information in order to strengthen his hands in his efforts to get proper clauses introduced into that act for the protection of the watchmakers. Mr. Hewitt propounded his opinion that what was wanted in this country was a factory that would turn out complete and cheap watches. The passing of the Act has interfered, to a very great extent, with the importation into this country of foreign watches, and there can be no doubt that this interference is solely due to the fact that in days gone by, watches of foreign manufacture have been sold to the public as the work of Englishmen. According to the prospectus it seems the value of watches and parts thereof imported into the United Kingdom during 1887 was £750,750, whilst in 1888 it had decreased to £585,369. This is an extraordinary diminution, and there can be no question that it should give an impetus to the English watch trade. The company has been formed by an amalgamation of almost all the watch movement makers in Prescot, and of three firms outside the town. The amount paid to purchase the machinery, tools, stock, &c., belonging to these businesses is £20,762, and the directors point with satisfaction to the fact that only £4,662 of this sum has to be paid in cash, the firm of Mr. T. P. Hewitt, who is to be manager of the company, accepting the entire of their purchase money in shares. The desire of the company is to produce a complete cheap watch, and they hope when they get fully at work to turn out 500 of these a day. It is calculated that a very small rate of profit will enable the directors to pay a substantial dividend upon the capital called up. It is already stated that those in authority in the undertaking have received an offer from an eminent English wholesale house who annually sell an immense number of watches, to take all the watches the company can produce. Last week Mr. Tyrer, Mr. S. H. Hartley and Mr. T. P. Hewitt waited on Lord Derby, who has, from the commencement of this movement, taken considerable interest in it, and went into the subject thoroughly with him. His lordship incidentally intimated his pleasure that so small an amount of the purchase money had to be paid in cash, and expressed his willingness to take £2,000 worth of shares, and to allow the company to make use of the fact in any way they thought proper. We believe Colonel W. W. Pilkington has expressed his satisfaction with the scheme, and is also allowing the directors to use his name. Each of the directors is investing £500 in the company, with the exception of Mr. Dennett, who has so much confidence in the concern that he is taking £1,000 worth of shares. The company is now at work in the present factories, but it is intended to immediately erect a large building, exactly suitable to the purposes of watch manufacturing on a big scale.

St. John's Church, Coventry.—The work in connection with the new clock at St. John's is in progress, and the committee are in communication with an eminent firm of bell-makers for a re-arrangement of the bells. The clock dials, of which there are four, will be placed twelve or fifteen feet higher than at present, and the bells will be so arranged that the mechanism of the clock will be in the centre of the tower. The number of bells will probably be increased from five to six.

No paper of the trade comes to us from across the water in which we are more interested than the *Watchmaker, Jeweller and Silversmith*, of London, which is ably edited by Mr. David Glasgow, Junr. Always neat, it presents an improved appearance in the initial number for 1889.—Chicago *Jewelers' Journal.*

Prospects of Intending Emigrants.

We are often applied to by young workmen and others, who have an idea of bettering their condition by emigrating, for information respecting the prospects of the various colonies for such and such trades. To such the following circular, issued from the Emigrant's Information Office, may be of interest. We would observe, however, that the term "mechanic" is used in the circular in its broad and general sense, and that, therefore, any private local information on the emigration prospects of, say, watchmakers or clockmakers, would be far more reliable. As far as our information on the subject goes, it is to the effect that for fairly good workmen with a small capital there are many openings in the colonies for setting up on their own account.

Emigrants' Information Office.—This quarter's Circulars, relating to Canada, the Australasian and South African Colonies, have just been issued; and a Poster, giving a summary, is exhibited in every Post Office. Queensland grants free passages to single female servants and selected unmarried agricultural labourers, and Natal grants them to a limited number of small capitalists under special provisions. Western Australia, Queensland, and under special conditions, the Cape grant assisted passages, and Western Australia, Queensland, and Natal nominated passages at reduced rates—mainly to female servants and agriculturists. Farmers with capital and female servants will find openings in all the Colonies; and agricultural labourers in Canada (in the spring), New South Wales, Victoria, Queensland, Tasmania, and some districts of New Zealand; while mechanics are only in demand in very few localities, as in the western districts of Canada (in the spring), in Melbourne, especially for those connected with the building trades, and, to a limited extent, in Tasmania.

The Circulars may be obtained, *free of cost*, from the office—31, Broadway, Westminster, S.W.; and ten separate Handbooks, one for each Colony, and each containing a map at 1*d*. each, post free, or bound together, at 1*s*. 6*d*.

Proposed Liverpool Exhibition of Decorative Art.—It is proposed by the Corporation of Liverpool to hold an Exhibition of Art Decoration and Art Applied to Manufactures during the months of April, May, June and July of the present year. The proposed exhibition will include tapestry, embroidery, wall papers, ceramics, wood carving and turning, metal wares, bookbinding, and art work in general.

Proposed Exhibition at Belfast.—The idea of holding an exhibition here in 1890 has not yet been definitely decided upon. The Mayor of Belfast presided the other day at a very largely attended meeting, held to consider the whole matter, and, after much discussion, a committee was appointed to consider all the circumstances connected with the affair, and prepare a report to present at another public meeting in a month's time. Some large amounts have been placed upon the guarantee fund list, and some handsome donations have been promised.

Proposed Exhibition at Leeds.—At a meeting of the Leeds Town Council, held on February 4, Alderman Scarr moved the adoption of a report from the sub-committee appointed to consider the advisability of taking steps for holding a grand exhibition in Leeds during the year 1890. The report was against holding the proposed exhibition. After a long discussion the report was rejected by 25 votes to 22.

The Paris Exhibition.—The Executive Council of the British Section have received an intimation that the Northern Railway of France, acting in connection with the London, Chatham, and Dover and the South Eastern Railways on this side, will convey goods for the exhibition, between London and Paris, at one-half the usual rates. Exhibitors will also have the privilege of purchasing from the companies mentioned above return passenger tickets for themselves and their workpeople, available during the whole of the year. These tickets will be issued at the ordinary rates. The arrangements necessary for carrying these propositions into effect have not yet been decided upon, but full information will shortly be furnished to the exhibitors.

The Diamond.

By W. Ford.

(Continued from page 119.)

The drill now generally used for boring through the granite is a tube made of Bessemer steel, of various sizes, from two inches to ten inches in diameter. The pieces of carbon are firmly set in the edge of the tube, from twelve to one hundred pieces in the circle, according to the size of the drill used; those used for heavy blasting are generally from six to eight inches in diameter. This drill is screwed on to another tube, according to the length required, and turned by machinery with rather a slow motion, water being continually injected into the hole, which, when the drill is withdrawn, leaves a long core. This core is easily broken out by leverage. When a number of these holes have been made in the granite at a considerable depth, the charge of dynamite is inserted, and a hundred tons of granite are removed at one explosion. The drill, on a smaller scale, is used largely in prospecting for various metals; other drills are used for the ordinary crust of the earth, but after going down from three to four hundred feet the operators come to the granite, then carbonate is the *only* material which can be used. Now they go two hundred feet below the granite, and afterwards find the most valuable metals. Scientific men to whom we have supplied this carbon tell us that any other material is useless for their purpose. Prospectors have often drilled through forty feet of solid granite formation before getting into another strata; without the carbon this would be an impossibility. Twenty years ago this carbonate could be purchased for about two shillings per carat, now selected pieces will fetch seventy shillings per carat. For other engineering purposes carbon has come into use in numberless ways. After a piece of steel has been hardened, it is found that, in the process of hardening it has become out of truth; the piece of carbonate is then used as a turning tool; the steel, although as hard as it can be made, is re-turned by the actions of the carbonate tool. Many pages could be devoted to describing a few of the uses to which this wonderful material can be put, although so worthless in appearance. This carbon deserves the greatest study and interest both for the present and future ages, for its uses are at present only in its infancy.

But now turning to the diamond as used for ornamental purposes both by the trade and the wearer, when it is artistically polished, is the most glorious gem in the world, its cleavage is perfect, its refraction is simple, it is combustible under great heat when exposed to the oxygen of the atmosphere, it is not fusible but becomes phosphorescent when exposed to the light, it is found in all colours, white, yellow, brown, red, blue, green, black, or other intermediate tints, it is a non-conductor of electricity but becomes electrical by friction although it soon loses its power. When a diamond is exposed to great heat it disappears altogether leaving no residue whatever. Everything else known in minerals or metals leaves a residue, but when diamonds are accidentally burnt in an ordinary fire the surface is only calcined, and they can be re-polished and become as brilliant as before. Some scientific men state, that burning a diamond and at the same time excluding the oxygen of the air makes it whiter, but that when polished, it comes back to its original colour. All the science at present in existence cannot alter the nature of the diamond. Jewellers of the old school pretended to be able to improve black spots in Brazilian diamonds, but the actual results were nil.

(To be continued.)

The Third Report of the Committee of the Birmingham Jewellers' and Silversmiths' Association has just been published. It contains particulars of the proceedings at the annual meeting, held on January 24, and the present strength of the Association (over 120 members); with the views of the Committee on the various trade matters of interest, at present on the carpet. The balance sheet shows the total receipts from subscriptions and School of Art fees to have amounted to £118 odd, deducting the necessary expenditure from which, leaves a balance of £2 odd in the treasurer's hands.

The Origin of the Watch.

AT the present moment, a universal hour is being very much debated on the Continent; at the same time, for those who are curious on the subject of the hour of the past and the primitive means of measuring it, a most interesting work, *La Vie Privée d'Autrefois*, by M. Alfred Franklin, has just been published, and contains, among other matters, some particulars on the subject of our heading, from which we extract the following :—

"To be able, at every instant of the day and night, to determine what hour it is, seems to-day to constitute one of the essential elements of civilisation. It is, however, true that the Romans lived during five centuries in complete ignorance of the processes by which time is measured. The civil day was then divided into 24 hours of unequal duration, which reckoned from the middle of the night till the middle of the following one. The usual day, which was still less well defined, had as its limits the rising and setting of the sun, and was divided into three parts—morning, noon and evening. The only public clock at Rome was represented by the usher of the Consuls. When from the senate he perceived the sun between the rostrums and the græcos-taxis, he announced the birth of the day; he signalled from it the last hour, when the star had descended between the mænia and the prison. In the interim there was no other guide than the position of the sun in the horizon. It was not till 491 that the municipality established at the Forum a solar dial, and, four years later, a clepsydra, indicating the hours of the day and night. In France there was also a time when, though neither pendulums nor alarums, watches nor clocks were known, society was regularly organised; when fixed hours called the servant to his work, the soldier to his post, the priest to his altar, the judge to his court, the student to his studies, the workman to the factory. I do not pretend that then one bound himself to very rigorous punctuality. But the invention of instruments destined to measure time, contributed little to develop the practice of exactitude. This dates from yesterday—from the push given to business—from the nineteenth century. In the Middle Ages—an epoch of naïve faith—civil and religious life were confounded. The church, in succeeding the Roman basilica, had replaced it; it did not limit itself to offering food to the the need of devotion which filled the soul: one came to it to seek, at the same time as the ceremony of sacred ceremonies, the necessary authentication of private acts. The clergy concentrated in its hands all science, all instruction.

"Paris for a long time had no other monuments than its churches; from the distance they had the appearance of lighthouses in the sea. The church dominated and directed everything. The regular ringing of its bells, the sound of which filled the narrow streets, which were dark and tortuous, recalled every one to his duty, his work. The time is the thirteenth century, when the bells sounded :—

"Matines, at midnight.
Laudes, at three in the morning.
Prime, at six o'clock.
Tièrce, at nine o'clock.
Sexte, at noon.
Vêpres, at six o'clock
Complies, at nine o'clock.

"These were the canonical hours observed everywhere. But there were besides, in each church, in each convent, other offices which were also announced by the sound of bells, and the hour of which was well known to the inhabitants of the district. A little later they became known as the 'small hours.' On Saturday, for instance, the silk-spinners left off work in winter at six o'clock, and in summer 'when the *aumosne* is sounded at St. Martin des Champs.' The millers were not to use their mills on the Sunday 'that the blessing of the water took place at Saint Liefroy, from which vespers were sounded.' This benediction of the water is a ceremony which precedes grand mass. Lastly, the shoemakers left work at any time when the curfew sounded, 'when the curfew hour is sounded at Saint Merri.' Relatively to the duration of work, the year was then divided into two seasons—the *carême*, or season of long days, and the *charnage*, or season of short days.

"Generally speaking, the short day season commenced at St. Remi (October), and finished at Brandons. Thus it was an interdiction for shoemakers to work on Saturday 'in *charnage*, from the first stroke of vespers, sounded at the Notre Dame, and in *carême*, as soon as complies is sounded at the same place;' that is to say, from six o'clock in winter, and nine o'clock in summer.

"The statutes presented about 1268, to the Prevost Etrenne Boileau, by the different corporations, leave no doubt as to the manner in which workmen knew the hours. The lantern makers stated that on Saturdays they went home at the 'first stroke of vespers sounding from St. Innocent,' or in the parish under which the lantern-maker dwells. The shoemakers, upholsterers, and breadmakers also took as the signal the first stroke of vespers sounding from the parish in which the workshop was situated. The carpenters obeyed the notice given by the 'Great saint of Notre Dame.'

"There are also other indications, which are less precise. The linen weaver began work 'at the hour of sun-rise,' the filler of Sainte Geneviève, 'as soon as one could recognise a man in the street.' The felt hatter waited 'till the sentry had sounded the day,' and the silk draper, 'the sentry sounding the morning.' In order to understand this expression, it must be known that every morning, at twilight, the sentry's horn was sounded from one of the towers of the Châtelet. This signal, known as the *guette cornée*, gave their liberty to the *burgeois* who had been on sentry duty during the night; it announced at the same time to the Parisians that day was about to break, and to workmen and servants that it was time to rise. Some of these ended the day by the cry of the wine-seller, who made two rounds a day, and at fixed hours. These wine-sellers themselves regulated their movements by the church clocks, and the only question which now remains to be decided is how the religious orders arrived at a knowledge of the time.

"The only method, at the beginning, was the inspection of the stars. The monk charged with ringing the bells slept during the day; during the night he did not go to bed, and went outdoors from time to time to examine the sky. Thus we read that a brother 'exivit ut videret astra et cognosceret si esset hora pulsandi,' (which may be translated 'went out to study the stars and to see if it were the hour to sound the bells'). When the horizon was so dark that no star was visible, recourse was had to various devices. The monk who was watching determined the hour approximately by the number of psalms which he had recited since his last examination of the sky, by the number of pages he had read, by the quantity of wax which a taper had consumed, by the oil which a lamp had burned. Occasionally the crow of the cock served as the signal for the getting up of the monks: the rule of St. Benoît ordained that 'in verni vel æstatis tempore, a pullorum cantu nocturni inchoentur.' This same rule, seen again in the seventeenth century, tells us that the rich convents had already a surer means for knowing the hour. The two monks to whom was confided the care of sounding the bells, must, day and night, interrogate the clock, 'in nocte et in die soliciti horologium conspicere.' What must we understand by this word *horologium*? In the day it was doubtless a gnomon, or solar-dial; in the night it could only be a clepsydra. The first clepsydra which appears to have been seen in France, was that which Theodoric sent, about the year 500, to Gondebaud, king of Burgundy. It had been constructed by Boèce, and the water falling drop by drop indicated the hours. The astonished Burgundians could not understand this phenomenon; they looked at the apparatus, so as to assure themselves that no one touched it, and at last came to the conclusion that it was animated internally by some divinity. In 761 Pépni le Bref received from Pope Paul I. a certain number of books and a night clock, 'et horologium nocturnum,' said the Pope in his letter. This was then not a solar dial, but a clepsydra, and perhaps it sounded the hours.

"Alexandria succeeding to Athens, was under the Ptolemies, the veritable centre of human knowledge. At the beginning of the ninth century, letters and sciences chose another capital. Bagdad, governed by the great Aaron, or Haroun Alraschid, became the centre from which northern Europe drew its light. The embassy, which Haroun sent to Charlemagne, is still celebrated. Among the presents which it sent to the Western barbarians, a clepsydra was admired, which proved to what a pitch of cleverness the Persian horologers had then attained. Eginhard, friend and counseller of Charlemagne, thus describes to us this clock, which he had certainly studied :—'A mechanism moved by water marked the course of the twelve hours, and at the moment each hour ended, an equal number of small brass balls fell on a bell placed below, and made it toll by their fall. There were also twelve knights, who, when the twelve hours were ended, came out of twelve windows, closing behind them in the shock of their coming out these windows, which before were open. Many other marvels were to be seen in this clock, but they would be too long to set down here.'

"The workmen of Aix-la-Chapelle probably did not attempt to imitate the ingenious mechanism which they had under their eyes, for we must wait nearly 300 years before finding sounding clepsydras employed in Europe. In the *Usages de l'Ordre de Citeaux*, compiled about 1120, the sacristan is ordered to set the clock so that it sounds before the hour of matins. It is therefore permissible to suppose that at the end of the thirteenth century, this sort of clock would be sufficiently common in the rich Paris churches. Still, Saint Louis preferred to regulate his life by candles, the length of which was determined so that they should be consumed in a given number of hours. This process, still much in use, without doubt gave birth to a singularly vague division of time, and especially of the night. It was divided into three candles, and the expression 'one candle' designated either the first third, or any other third of the night's duration; three candles meant 'the whole night.' Examples of this manner of counting the hours are not rare, several having been collected by Ducange.

A Dictionary of Photography.—The great advance in popular favour photography has made of late years is in nothing better exemplified than in the number of text books and manuals that have been published on the subject. What may be considered a combination of both, and one of the best instruction books we have seen, is now before us. It is entitled *A Dictionary of Photography*, and is intended for both the amateur and professional. In it are arranged alphabetically the chemical and optical terms, with the various formulæ and processes necessary for the worker to comprehend as he advances in the art; the information is well up to date, and all the explanations are expressed in plain language. The book is written by Mr. E. J. Wall, and is published by Hazell, Watson, and Viney, Limited, 52, Long Acre, W.C.; its price (2s. 6d.) should bring it within the reach of all.

Coventry Technical Institute.—A public meeting of the inhabitants of Coventry convened by the mayor, was held recently at the Technical Institute, to sign a requisition to the Department of Science and Art for assistance in alteration of a portion of the building. The Mayor (Alderman Tomson) presided, and there were also present the Rev. F. M. Beaumont, Dr. Lynes, Messrs. J. C. Odell, P. Cohen, W. Kirk, F. Caldicott, G. Steane, S. Owen and F. P. Naish. Letters of apology were received from Mr. John Rotherham, Mr. J. Cramp, Mr. A. E. Fridlander and Mr. J. Player. The Mayor explained that the requisition ought to have been sent before to the Department. The roof of the laboratory required to be raised in order to meet with the requirements of the Department; the necessary alterations had been made, and the money had been already spent, but it was found that this formal application had been omitted. It was for the purpose of getting a grant of about £50 towards the cost of the alterations, that they were applying. The Rev. F. M. Beaumont said he took it they were all agreed as to the desirability of getting the £50; and the Mayor, in reply to a question, said no resolution was necessary. Those present then signed the requisition, and the meeting terminated.

Prosecution under the Merchandise Marks Act.

AT the Mansion House, on the 8th ult., Mr. Andrew Campbell, watchmaker, of 63, Cheapside, attended before Alderman Sir H. A. Isaacs on a summons charging him with an infringement of the Merchandise Marks Act in having unlawfully sold a watch to which had been applied a false trade description as to the place and country in which it was made.—Mr. Forrest Fulton prosecuted; Mr. Hawksley appeared for the defence.—The defendant pleaded guilty. Mr. Fulton said the prosecution was instituted, as a test case, by the London Watch Trade Association, whose members, and especially the working classes engaged in their business, had long been seriously affected by the sale in this country of worthless foreign watches under the guise and description of English-manufactured goods. The defendant was admittedly a respectable tradesman of long standing in the City, and there was no imputation that he himself had applied the false description to the watch in question. Some members of the Association saw exhibited for sale in the defendant's shop in Cheapside a silver watch, stamped on the face of it "English Lever Watch Company." They went in and purchased it for £1 18s. 6d., and on examining it they found that it was one of the worst kind of foreign-made watches, such as could be bought wholesale at 14s. It bore the Swiss hall-mark, and was marked inside "expressly examined," and on another part "patent lever jewelled," while on the works there were the words "chronometer balance."—Mr. Hawksley said Mr. Campbell did not deny the mere sale of the watch by his assistants, but he had not been at business for some time, and he was ignorant that the watches which came into stock in 1885, long before the passing of the Act, were being sold.—Sir Henry Isaacs said, having regard to the fact that the case was the first of its kind connected with the watch trade, he should impose the mitigated penalty of £5, and £20 costs. He was glad that there was no personal imputation against Mr. Campbell, but he must be held responsible for what others had done in his behalf. He hoped the fact of the prosecution being instituted would put a stop to a very pernicious system, and thus bring about wide-reaching results.—The fine was paid, and Mr. Campbell also restored the money which had been paid for the watch.

American Items.

THE question the fashionable world is now so much exercised over—Is Marriage a Failure?—must be answered says the New York *Jewelers' Circular*, by every jeweler in the negative. To him marriage is far from being a failure; it is a divinely ordained institution, fraught with all the charms and blessings of heavenly nativity. Hymen is the god of the jeweler, a god whose rites are celebrated by the giving of precious gifts and by universal largess. What St. Nicholas is to the little folks that Hymen is to him, and his daily advice should be but a reiteration of the Divine command in the book of Genesis—"Increase and multiply and replenish the earth."

According to the New York *Times*, a communication received by a resident of this city from one of the jurors of the Brussels Exhibition, proves that the reputation of American artisans abroad has been fully sustained by the few exhibitors who took part there. The writer says:

> "I have just finished the duties of juror at the exposition, and must say of the returns that in the agricultural machines, on which division I served, we received for the United States three diplomas of honor (the highest award) and one gold medal—in other words, a diploma of honor for each exhibitor but one, and he really only deserved the gold medal. The other exhibitors fared equally well, for out of 73, 54 received distinctions of greater or less degree. I think we have reason to congratulate ourselves."

This, says the writer, is encouraging, and should make American manufacturers the more anxious to have a favorable showing at the great Paris Exhibition this year. Despite the foolish prejudices of some of the European powers who have refused to take part in the celebration for fear of endorsing the French Revolution, the

Exhibition will probably be the most memorable of all the memorable enterprises of this kind that France has projected. Congress has appropriated £250,000 to defray the expenses of the United States Commission, and expressed itself as highly favoring the scheme. General W. B. Franklin has been appointed Commissioner-General on behalf of the United States, and Mr. Somerville P. Tuck, Assistant-Commissioner. Offices have been opened in the Washington Building at the Battery, whence circulars and information are being sent out very freely, and where special inquiries will be promptly and fully answered. In addition to the gentlemen above named, the governor of each state and territory has been invited to appoint a commissioner to co-operate with the government representatives, thus making every section of the country directly interested. In the various exhibition groups provision is made for the display of goldsmiths' and silversmiths' work, art bronzes, watches and clocks, jewelery and precious stones, tools of all kinds, and, in fact, for everything connected with the watch, clock and jewelery industries. It is probable that the industries of America will be largely represented, as much interest in the event has already been shown. Paris anticipates several millions of visitors next summer on account of the Exhibition, and as the steamships will be unusually crowded those anticipating a trip to Europe this year should engage passage very early in the season—at least three months before the proposed date of sailing. No doubt additional steamships will be put on, but most travellers will prefer those that are regularly employed in this traffic. Never, observes the correspondent, have our artisans exhibited their handywork abroad without receiving distinguished honors and a new incitement to effort, and it is to be hoped that the Centennial Exhibition of 1889, commemorating as it will one of the most important political eras of modern times, will not be neglected by the jewellery and kindred trades of this country. Now they need have no fear in coping with the world.

Casket for Lord Dufferin.—The General Purposes Committee of the Corporation of London, met on the 20th ult., in order to view the designs for the gold casket which is to be presented to the Marquis of Dufferin with the Freedom of the City. The design of Messrs. George Edward & Sons, of No. 1, Poultry, London, and Glasgow, was selected from a considerable number. Messrs. Edward & Sons were successful in the competitions for the caskets which were presented to Lord Wolseley, the Earl of Shaftesbury, and Mr. H. M. Stanley by the Corporation of London.

The Diamond Trade of Antwerp.—A correspondent of the *European Mail* says:—Now that Antwerp is being more and more developed as the commercial metropolis of Belgium, and is attempting to rival both London and Liverpool as a centre of the international carrying trade, I think a few remarks on some of the town's industries will be interesting to your readers. I shall begin by giving in this month's letter some details in regard to the diamond industry. The importance of Antwerp as the centre of this trade has never yet been questioned, but by degrees only has she become one of the most important markets in Europe for cut stones and for the preliminary work in connection therewith. Nearly all the merchants and manufacturers belong to a trade society, which has a special *locale*, open to members and foreign merchants only. Here daily transactions, both in purchases and in sales, are carried out to the extent of millions of francs. The supply of the rough article is principally from the London market, but some large firms have direct representatives at the Cape. The quality of the Antwerp cutting is much appreciated, and one particular firm is quoted as being one of the most perfect diamond cutters in the world. Its "rose" or "round" diamond is celebrated wherever the jewellers' art is known, and the "briolets" which come direct from the hand of one of the principals of the firm are inimitable. Antwerp has about 150 to 200 merchants and manufacturerers, 100 brokers and about 2,500 lapidary workmen.

The Ruby Mines of Burmah.

On the 15th ult., Mr. G. Shelton Streeter read a paper on this subject at the rooms of the Society of Arts, John Street, Adelphi, Sir Charles E. Bernard, K.C.S.I., in the chair.

The Chairman said the ruby mines of Upper Burmah had been for years, and were now, the only source in the world for obtaining good rubies, which, if perfect in shape and colour, and comparatively flawless, were, weight for weight, more valuable than diamonds. Mr. Streeter was amongst the first party of Englishmen who had ever set foot in the ruby territory, and he passed several months there in 1887 and 1888. He was the first European expert in precious stones who ever visited the ruby country. He and his friends had obtained the concession of the mines, as far as rubies and sapphires were concerned, for the next seven years, and he (the chairman) might say, without the slightest hesitation, that he was the best informed Englishman who could address them upon the subject.

Mr. Streeter, at the commencement of his paper, explained that the ruby mine tract of Burmah was situated on the hill sides, and in the plain lands of a valley running east and west, nestling at an elevation of 4,500 feet in a range of mountainous spurs that ran nearly at right angles to the Burmese Yoma. This valley was some eighty miles due north of Mandalay, the capital of Upper Burmah, but, owing to the grave physical difficulties of the intervening country, it could only be reached after a circuitous journey of 200 miles. Mandalay was the base of departure for the ruby mines, and Mr. Streeter gave an interesting description of his journey to the mine district. The history of the country was lost in the domain of early Shan legends, but there was no doubt that these mines had been worked for hundreds of years. The first European who saw the mines was probably a runaway English sailor, who was in the employ of King Phayides in 1830, and who was sent to blast a certain rock at one of the Royal mines. Some of the present elders of the districts still remembered that man, and told amusing stories about his eccentricities. He must have died at the mine, or been quietly made away with, for he (Mr. Streeter) could not find any account of his return to the capital. The paper then dwelt upon the geological and other features of the district, and described the different kind of mines to be found in it, and the present modes of working them. The systems were very primitive compared with the higher European knowledge. Machinery was on its way to the mines, and would commence running in November, and there was great scope for scientific working and skilled management. Mr. Streeter then gave some highly interesting particulars concerning the various tribes who inhabited the ruby district, or lived close to it. They had heard a good deal in England about the natural rights of the inhabitants of the district, and the Government had caused a careful and searching inquiry to be made, both on the spot and at Mandalay, with regard to this question, and the result was that it was proved that the mines had always been, as they were now, Crown property. The inhabitants, however, from their close connexion with the mines, had a moral right to every consideration, and the Government had recognised that, and the natives were to be maintained in their old working by a system of licence, for which they would pay a royalty or duty on the products they raised. Although the district was always known as the ruby mines, it must not be imagined that rubies were the only precious stones found in it, for the same mines produced red, pink, and blue spinels, sapphires of very fine quality, and of nearly every shade of colour, from the yellow or oriental topaz to the green or oriental emerald, zircons, moonstones, or tourmalines. With regard to the climate, he said it was everything that could be wished, bright clear days, with sharp frosts at night in the winter months, and a moderate rainfall in summer, accompanied by very cool nights. All around there were magnificent views, and the difficulty of access from Mandalay would soon be remedied.

Sir **George Birdwood** said Mr. Streeter deserved their sympathy in the enterprise and commercial enterprise, so characteristic of their race, he had displayed.

Professor **Rudler** said he had examined the specimens of the rubies sent home, and they were of great value. It seemed that they had now really traced the ruby to its primitive matrix. He looked forward to the most brilliant results from the application of machinery to the mining. They might regard Mr. Streeter and his father as the pioneers in a new industry.

The **Chairman** said he was sure they all wished well to the concessionaires of the Burmah ruby mines. He might mention that these mines had always been looked upon as royal property of the Burmah rulers. He explained that the Legislature had fully protected the rights of the native miners, and he believed they would be better off under the present *régime* than they were under that of King Theebaw.

A cordial vote of thanks was passed to Mr. Streeter for his paper, and a vote of thanks to the chairman terminated the proceedings.

Practical Hints on Optics for Skilled Opticians.

In the able series of articles under the above heading, edited by C. A. Bucklin, A.M., M.D., now appearing in the pages of an American Contemporary the subject of Muscular Asthenopia is considered.

We consider this article quite fully, says the writer, because it represents the views of an extremist (Carter) which are in opposition to the generally accepted views.

In dealing with this piling up of hypothesis upon hypothesis, this continued postulation of something to explain something else, the chief difficulty is to select among the many objections which oppose themselves to the acceptance of Von Graefe's doctrine. In my own case, this difficulty is enhanced by the consideration that I have never seen any non-squinting asthenopic patient who seemed to me to require tenotomy of the externi; so that my knowledge of the operation is practically limited to cases in which it has been long without beneficial effect by some one else. As far as I am aware there is no other instance in which abductor muscles have been supposed to present impediments to the ordinary range of movement of unparalysed adductors; and there is no other instance in which it has been proposed to divide an abductor or an extensor muscle as a means of relieving the weakness of its assumed antagonist. The affection called "scrivener's palsy," may, by a trifling sketch of imagination, be described as an "insufficiency" of the flexors of the thumb and fingers; but I have never heard that division of the extensors has been suggested as a possible means of treatment. As soon as the ordinary range of movement of any set of muscles is exceeded, their antagonists come into play as inhabitory structures; but within the ordinary range the antagonists exert no such influence.* Acrobats of the class called contortionists differ from untrained persons in the degree in which the opponency of antagonistic muscles has been overcome by stretching; but no such stretching is needed until the limits of customary movements are overpassed. An acrobat, who can allow his feet to separate until his perineum touches the ground, has overcome by exercise the natural rigidity of the adductor muscles of his thighs; and, in like manner, a person who could perform adduction of the eyes until the corneæ became invisible, would have overcome the natural rigidity of the externi. It is clear, however, from all analogy, that the natural rigidity of the externi does not come into play as an inhabitory power within the limits of the ordinary movements effected by the interni; that is, for example, within the limits of the customary adduction of either eye in looking to the right or to the left with both. The assumption that volitional visual convergence can be impeded by the preponderating strength of the externi is likewise opposed to all analogy; for there is no other instance in which the strength of a muscle interferes with the free use of its antagonist. We never hear of an athlete whose flexors are so strong that he cannot extend his limbs, or whose extensors are so strong that he can not flex his limbs. Even the showman's little dog, whose tail was so tightly curled that he could not put his hind legs to the ground, would be a less strange phenomenon.† The convergence required for fusion, if impeded by the externi at all, can only be impeded by some condition analogous to spasm; and liability to spasm is characteristic of weak muscles rather than of strong ones. My attention was first called to the relation between the convergence function and sustained vision by the writings of Dr. Scheffler, and in the *Practitioner* for 1874 I published some papers on the hygiene of vision which indicated some divergence from the generally accepted view. In consequence of these papers Dr. Theobald, of Baltimore, was good enough to send me a copy of an essay of his own, which had appeared in the American *Monthly Journal of the Medical Sciences* for the preceding January and in which he discussed the value of Von Graefe's tests, and showed, I think conclusively that they would not bear the interpretation, which had been placed upon them. Still later Dr. Krenchel and Dr. Hansen, both of Copenhagen, have written very lucidly upon the question of insufficiency; and I believe it must now be generally conceded that Von Graefe's fabric of postulates has been overturned. The difficulties in the way of sustained convergence, whatever they may be, are certainly not due to "insufficiency of the interni" and cannot be rationally treated by tenotomy of the antagonists.

(To be continued.)

Gazette.

PARTNERSHIPS DISSOLVED.

Bechmann and Baer, Hatton Garden, jewellers. Hawkius and Treeton, Birmingham, jewellers. Chambers and Griffiths, Birmingham, electro-plate manufacturers.

THE BANKRUPTCY ACT, 1883.

RECEIVING ORDERS.

To surrender in London.—Evans, John, Mount Street, Grosvenor Square, and Hammersmith, watchmaker. Examination, March 8, at 12.30. Bradbrook, Thomas Frederick, Green Street, Bethnal Green, pawnbroker.

To surrender in the Country.—Thomas, George, Swansea, watchmaker.

ADJUDICATION.

In London.—Bradbrook, Thomas Frederick, Green Street, Bethnal Green, pawnbroker.

NOTICES OF DIVIDENDS.

In London.—F. Bailey, Wood Green, jeweller, 1s. 6d., first, 28 and 29, St Swithin's Lane, E.C.

In the Country.—John Britton, Nottingham, watchmaker, 2s. 6d., composition, fourth and final instalment, Official Receiver, Nottingham. W. Morris, Cardiff, watchmaker, 1s. 4¾d., first and final, Official Receiver, Cardiff.

Applications for Letters Patent.

The following List of Patents has been compiled especially for *The Watchmaker, Jeweller and Silversmith*, by Messrs. W. P. Thompson & Boult, Patent Agents, of 323, High Holborn, London, W.C.; Newcastle Chambers, Angel Row, Nottingham; and 6, Lord Street, Liverpool.

1,091. A. C. Morgan, London, for "A device for preventing purses being lost or stolen from the person." Dated January 21, 1889.
1,105. W. P. Walker and C. T. Crowden. London, for "An apparatus for carrying watches on velocipedes." Dated January 21, 1889.
1,171. F. H. Jerson, London. for "Improvements in studs or links for fastening or uniting cuffs, brooches and other articles of wearing apparel and ornament." Dated January 22. 1889.
1,287. B. Woodsford, London, for "A safety watch and money pocket." Dated January 24, 1889.
1,333. J. Jofeh and A. Lang, London, for "An improved machine for mechanically printing the correct time." Dated January 24, 1889.
1,355. C. C. Wright, London. for "Improved appliance for preventing watches or other articles from being stolen from the pocket." Dated January 25, 1889.
1,397. W. Ford, London, for "Improvements in scarf pins." Dated January 25, 1889.
1,565. Samuel Kershaw, London, for "Improvements in keyless watches." Dated January 29, 1889.
1,575. J. Kendal and M. Laval, London, for "A night-light timepiece." Dated January 29, 1889.
1,604. S. Chandler, London, for "Improvements in studs, solitaires and like fasteners." Dated January 29, 1889.
1,622. J. Young, Glasgow, for "Improvements in obtaining gold and silver from ores and other compounds." Dated January 30, 1889.

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*My experience is that the division of an antagonising muscle increases the power of the opposing muscle to such an extent that it may be readily measured by prisms.

Scrivener's palsy is treated by the use of artificial elastic appliances which favor the weak muscles, which is about the same thing.

†It however remains a fact when the interni are too weak to produce abduction easily, division of the externi enables the interni to do what they could not do before.

1,721. W. Hayward, Christchurch, for "Watchmakers' tools for adjusting the hands of watches without punching, hammering, or any assistant by means of adjusting screws, &c." Dated January 31, 1889.

1,722. W. Hayward, Christchurch, for "Screw tongs, watchmakers' tool for screwing and unscrewing nuts of keyless and other watches." Dated January 31, 1889.

1,944. A. Ingram, London, for "An improvement in chime clock making." Dated February 4, 1889.

2,250. W. Gardner, Harborne, for "The better security of solitaires, sleeve links and analogous articles, to be called the 'Lixem.'" Dated February 8, 1889.

2,255. D. Gray, Belfast, for "Improved means for affixing bows to keyless watches." Dated February 8, 1889.

2,349. T. H. White, London, for "Improvements in and relating to electric appliances for illuminating the dials of clocks and watches." Dated February 9, 1889.

2,510. E. Karthaus, London, for "Improvements relating to the mainsprings of watches, clocks and the like." (Complete specification.) Dated February 12, 1889.

2,552. J. Roots, London, for "Improvements in watches." Dated February 13, 1889.

2,686. T. M. Lynch, Liverpool, for "Dials for clocks, watches and other purposes." Dated February 15, 1889.

2,729. J. H. A. Chapman, Trowbridge, for "An improved watch ring attachment." Dated February 16, 1889.

Recent American Patents.

Binocular Glass. J. E. Briggs	395,872
Bracelet. T. King	396,939
Button. L. Sievert	397,030
Clock. H. Herwig	396.655
Clock Striking Mechanism. W. H. Poole	396.598
Combined Cane, Flask and Drinking Cup. J. E. Hale	395.224
Compensation Pendulum. A. Lawrence	396,095
Dust Band for Watches. D. H. Church	396,267
Ear Jewel. G. W. Washburn	396,788
Electric Time Meter. G. F. Card	396,645
Eye Glasses. H. Borsch	396,264
Eye Glass Holder. H. J. Dale	396,144
Gem Setting. D. Kutner.	396,092
Handle for Cutlery. F. R. Kaldenberg	396,091
Means for attaching Eye Glasses. W. H. Brownlow	395,811
Opera Glass. G. Holle	396,657
Opera Glass Holder. H. Borsch	395,946
Scarf Holder. M. Forbes	396,994
Stop Watch. F. Bovet	396,914
Stud or other Jewellery. A. Luthy	396,661

A printed copy of the specifications and drawing of any patent in the American list, also of any American patent issued since 1866, will be furnished from this office for 2s. 6d. In ordering, please state the number and date of the patent required, and remit to J. Truslove, Office of *The Watchmaker, Jeweller and Silversmith*, 7, St. Paul's Churchyard, E.C.

Correspondence.

All Letters for Publication to be addressed to the Editor *of* The Watchmaker, Jeweller and Silversmith, 7, *St. Paul's Churchyard, E.C.*

All communications must bear the name and address of the sender, not necessarily for publication, but as a guarantee of good faith.

To the Editor of *The Watchmaker, Jeweller and Silversmith.*

Sir,—Will you be so good in your next number to insert a note correcting the paragraph on page 126, where you state the expenditure for testing watches and chronometers here amounted to £106 during the past year.

If the writer had cast his eye down the balance sheet he would not have overlooked the item—By Salaries, £1596. The sum for incidentals given, £106, must not in any way be taken as independent of the other expenses incurred in the maintenance of the Observatory, as we are not able to get men to work for nothing, or provide gas, fuel, etc., etc., gratis. The same remarks also apply to the verification work, which shows, if balanced your way, a profit of £760.

Yours faithfully,

G. M. WHIPPLE.

Kew Observatory, Richmond, Surrey.
February 1, 1889.

JOHN SKINNER,
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The Watchmaker, Jeweller and Silversmith.

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The Watchmaker, Jeweller and Silversmith.

A Monthly Journal devoted to the interests of Watchmakers, Jewellers, Silversmiths, Opticians and kindred traders.

Correspondence.—Correspondence is invited on all matters of interest to the trade. Correspondents will please give their full address in each communication, not necessarily for publication, but as a guarantee of good faith.

Subscription.—A copy of the Journal will be sent monthly for one year, post free, to any address in the United Kingdom or countries in the Postal Union for 5s. payable in advance.

Advertisements.—The rates for advertising will be sent on application. The Watchmaker, Jeweller and Silversmith will be found an exceptional medium for advertising. Special Notices, Situations, &c., per insertion, 1s. for two lines, prepaid.

Address all business communications to the Publishers,

Messrs. TRUSLOVE & SHIRLEY,
The Watchmaker, Jeweller & Silversmith,
7, ST. PAUL'S CHURCHYARD,
LONDON, E.C.

Cheques and Postal Orders to be made payable to J. Truslove.

Editorial.

OURSELVES.

IN placing the present number of the *Watchmaker, Jeweller and Silversmith* before our readers, we have the pleasure to announce that the solid and steadily growing support accorded to us by the trades we have the honour to represent, and, more especially, the marked favour with which we have been received latterly on all sides, have enabled us to take the step (long contemplated) of enlarging the journal to what may be termed the second postal limit.

It is perhaps needless to observe that this step has not been taken without our fully realising the serious financial considerations involved in the departure, both as regards the extra postage charges and the general cost of production, and that it is only justifiable on the ground of large expectations in the shape of greatly increased patronage in the future from the trades with which we are identified. That this patronage will be granted to us we have every confidence.

Since the journal has been under the present management, it has steadily progressed,—and the current number shows that the original magazine has been exactly doubled in size.

As the Americans say, "we came to stay," and as our aim all along has been to reach the whole trade, to use another colloquialism in favour on the other side, "we mean to get there."

Thoughtful business men in all branches of trade have noticed that for some time past a great change for the better has been coming over the trades of this country. Periods of depression and financial crises have necessitated an alteration from the old methods of transacting business, and the new methods have done away with many of the prejudices and mutual jealousies at one time so prevalent, and produced a better feeling among those to whom kindred pursuits should prove a bond of union.

It is now pretty generally understood that the man who holds himself aloof and considers himself and his affairs only, without any regard for the community of which he is a unit, will in the long run be left behind or come to grief.

This is as it should be. Of course, it would be too much to expect such a point of commercial education to be appreciated all at once, hence we have individuals still fondly clinging to the old idea. Such people, however, are now happily few and far between; they become every day more scarce, and it is to be hoped, in the interests of the trade at large, that the species may soon become extinct.

As we have on more than one occasion maintained, the best medium for that intercommunion of ideas essential to trade prosperity, is a properly supported trade journal. To that end we invite the collaboration of all who are interested in the well-being of the industries with which we are connected.

Our motto is, in substance, that of the Swiss republic: "One for all, all for one," and should our readers, as we have no doubt and trust they will, accept the foregoing remarks and agree with the spirit in which they are written, we shall be enabled to greatly extend the scope and usefulness of the *Watchmaker, Jeweller and Silversmith.*

Under the title, "What the Blue Books tell us," the Canadian jewellers' journal has compiled a table showing the imports of jewellery and watches into the Dominion for the years from 1880 to 1888, inclusive. The classes of goods included in the table are: Watches, Watch movements and Cases; Watch movements only; Jewellery; Gold and Silver manufactures not specified; Clocks; Unset Diamonds; Electro-plated ware, &c.

The various sources of supply are given only as regards watches, watch movements and cases, and movements only, so that we are only able to make a comparison of these two divisions as they affect the trade of this country; but the comparison is not by any means favourable to our home manufacturers, both the statistics and the remarks of our contemporary which accompany them forming a strong indictment against them.

The imports of watches, watch cases and movements from the United States in 1880 were in value 61,877 dols.; in 1888 they were 420,371 dols. The same from Switzerland were 39,493 and 113,661 dols., respectively, while from Great Britain they were 15,162 and 14,481 dols.

"Taken as a whole," says our contemporary, "the most important branch of the jewellery trade is undoubtedly that of watches. Canada not having any watch factories of her own, and being neutral ground where the manufacturers of Europe and America can compete on even terms, it is interesting to watch the progress of this commercial battle as shown by the imports given in the above tables from the three principal countries, viz., the United States, Switzerland and Great Britain. Twenty-five years ago the American watch was almost an unknown quantity in the Canadian trade. In those days the watches used in this country were imported almost exclusively from England and Switzerland, the latter country being our principal base of supply. The advent of the American watch upon the scene was not regarded with any alarm by the Swiss and English manufacturers, who felt perfectly confident that the venture of their New World competitors would never amount to anything. It certainly seemed safe reasoning at that time, for not only had the European manufacturers the advantage of cheap skilled labour, but they had possession of this market, and were thoroughly entrenched in the superstition then prevailing that nowhere outside England, France or Switzerland could a watch be manufactured that would keep time. The idea that watches could be made by machinery and have their parts interchangeable with any others of the same grade, was looked upon as chimerical by those manufacturers of Europe, who thought that what they didn't know about the business was not worth knowing.

"At the present time the American watch has far outdistanced both of its rivals, the Swiss are a poor second, while Great Britain is almost nowhere in the race. Indeed, so far as watches of English manufacture are concerned, the latter may be practically said to be a thing of the past, for as a matter of fact, nearly the whole of the goods imported by us from Great Britain are manufactured either in Switzerland or the United States, and simply handled by her merchants on commission.

"A significant item in these tables is the way in which the American idea of interchangeability has acted upon the Swiss watch trade. In the year 1880, out of 105,000 dols. of Swiss goods imported into Canada, ninety-four per cent. were sent as complete watches, and only six per cent. imported as movements without cases. Last year out of 113,661 dols. of imports of Swiss watches, 58,591 dols., or over fifty per cent. were movements only, and designed to fit American or Canadian made cases; certainly quite a revolution from their old methods of doing business.

"The imports of American watch movements practically show an unbroken advance ever since their introduction into this market. Previous to the year 1881 watch movements were not enumerated separately, but were lumped in along with complete watches and cases. Since then the figures show that the imports have jumped from 53,792 dols. in 1881 to 258,101 dols. in 1888, an increase of nearly 500 per cent."

The foregoing points to a screw being loose somewhere in our methods of approaching Colonial markets. Our manufacturers compete elsewhere on even unequal terms, as regards tariff, &c., with foreign producers. Either, therefore, English watchmakers are unequal to the task of adapting their styles to the tastes of this particular market, or their goods are insufficiently pushed. The former conclusion must be repudiated as altogether unworthy of a trade that can compete successfully in other markets under varying requirements of fashion, and the latter must obviously be the reason of our standing still in the Canadian trade. We say standing still advisedly, as the figures given show that the difference is entirely owing to our competitors going ahead of us. Dr. Johnson says somewhere that the man who goes through life without forming fresh connections will soon be left alone in the world, and this seems to have been the weak point in some of our English methods of business. Manufacturers here are now beginning to see that a reliance on past reputations will not do in the face of a vigorous foreign competition. We trust our next Colonial edition will show that these remarks have been appreciated.

General Notes.

An American firm have applied for a patent for a device for the accurate setting of the seconds hand of a watch without opening the case.

News of a desperate plan of robbing jewellers comes from the United States. This consists in presenting the business card of some well-known retailer and requesting to be shown certain goods. Then, while the jeweller is bending over a roll of stock, the thief deals him a blow with a bludgeon, which renders him unconscious, and makes off with the most portable or readily accessible of the jewellery.

One of Messrs. B. H. Joseph & Co.'s apprentices (Mr. Archibald Williams) has been awarded the first prize of the Birmingham School of Art branch of the Birmingham Jewellers' and Silversmiths' Association, for a set of drawings of shells, and the second prize for a sketch design.

Messrs. Simpkin, Marshall & Co. have arranged with Messrs. Goufel & Co. to publish an English edition of the *Figaro Exposition*, which will be entirely devoted to the Paris Exhibition, and will appear in six monthly parts, the first of which will be published this month.

The Lord Mayor is raising a fund with the object of sending a limited number of skilled workmen to the Paris Exhibition during the forthcoming months. The workmen are to be selected from different trades, and each representative will report on the exhibits appertaining to his particular trade.

Mr. John Fletcher, the ill-fated victim of the so-called Manchester cab mystery, was head of the firm of paper makers of that style, of Stoneclough, near Manchester, whose speciality is the production of the tissue paper used by silversmiths and electro-platers for wrapping up their goods. He was 48 years of age and a widower. His fortune, which is estimated at a quarter of a million, goes to his nephew, who was associated with him in the business.

Paris Fashions.—The Paris correspondent of a contemporary reports that quaint Empire and Directoire ornaments are just now the fashion; single strings of pearls, the longer the better; rows of brilliants for the neck or hair; bracelets consisting of half a hoop of diamonds joined by a curved gold bar and gold wire bracelets with a simple large stone on the top—a sapphire, cat's eye, ruby, topaz or amethyst—set in a circle of tiny diamonds; square and oblong coloured stones, such as amethysts and topazes, set in the same way for breast pins, and rings for the finger and ear; large single stones mounted on metal hairpins, and for small brooches the old familiar forms of the horseshoe, hoop, crescent and heart.

The heart-shaped brooch is merely an outline—that is to say, it consists of a narrow band of small stones fashioned into the shape of a heart, now with the point exactly below the indent above, now with it slightly curved toward the left side and a pin at the back. There are hearts of this sort in diamonds, rubies, sapphires and pearls, but they are preferred in the white or red stones. Sometimes two outline hearts—one in diamonds, the other in rubies—are attached together on one pin. They are very effective and pretty resting against a bow of ribbon or folds of lace.

Diamond crescents are made of coloured stones graduated in size. Very handsome brooches are composed of three crescents, one in diamonds, a second in sapphires, a third in rubies, entwined together, and simple crescents of plain frosted gold. Similar arrangements suit horseshoes and hoops, though the latter may be entwined in couples or trios, but the former do not lend themselves to such complication.

Ornaments of all sorts are made up of gold twisted into a spiral or cable, including most of the forms mentioned in the preceding paragraphs. Thus we find cable gold horseshoe, crescent and hoop pins, cable bracelets and rings. The cable bangle is no novelty. Sometimes a row of small diamonds is twisted round the cable, or, in the case of bracelets, a few stones will be set in the top of each twist of the cable, where coloured stones are made to alternate with diamonds. Chain bracelets are also in high favour, fastened by a pendant ball, a four-leafed shamrock or dog rose, either in metal like the rest of the bracelet or in coloured enamel. Shamrocks in light green enamel, in particular, are used for the purpose, with a single diamond glistening like a dewdrop on one of the leaflets. The chain generally consists of large, loose links.

Diamonds and coloured stones are preferred for jewellery, but pearls are the rage this year, worn in straight rows. And Roman pearls are worn by those who cannot afford genuine ones. Frequently the latter are set in almost as artistic a way as gems of price. When President Carnot made a recent excursion to the Faubourg St. Antoine, to visit the workshops of that quarter, he was sorely puzzled when two stones, a real and a false, were put before him and he was asked to decide which was genuine. Finally he gave up the matter in despair, and confessed himself unable to choose between them. It is often so in society; real stones ill-set, or of second-rate beauty, are mistaken for imitation, while good paste often passes muster even with connoisseurs.

A Good Suggestion.—Commenting on the small nett result accruing to the creditors of a Peterboro', Ontario, bankrupt upon the winding up of the estate, the "Trader" suggests that it would be better in all such cases to divide up the stock *pro ratâ* among the creditors, and let each one realise for himself on his share. This would have the double advantage, our contemporary thinks, of keeping such stocks out of competition with those dealers who pay 20s. in the £1, and pay the jobber better.

Foreign-made English Watches.—In reference to the recent prosecution of Messrs. Kendal and Dent, Messrs. M. F. Dent & Co., of Cockspur Street, wish it to be known that they are not in any way connected with the firm, either in business or by relationship.

London Watchmakers' Association.—We understand that the prosecution of Messrs. Kendal & Dent for infringement of the Merchandise Marks Act, has cost the Association upwards of £40. It will be noticed that whereas in the case of the prosecution of Mr. Campbell by the Association he was fined £5 and £20 costs, in that of Messrs. Kendal & Dent, although the fines totalled the same amount, the costs allowed were only £5.

The Forthcoming Birmingham Exhibition.—During the months of August, September, and October next, Bingley Hall is to be the scene of an Electrical and Industrial Exhibition, and judging from the success which attended the last show at the same place it will not be the least attractive of the numerous exhibitions which are to be held this year in various parts of the country. The latter title is almost universally comprehensive in its scope, and if the Midlands' Industries are at all adequately represented, as there is every prospect of their being, Bingley Hall will be well worth a visit from every one interested in the manufacturing prosperity of the kingdom.

Lancashire Watch Company.—We understand the required capital has been subscribed. The Earl of Derby has taken £2,000 in shares, and Mr. Dennett, a resident in Prescot, £1,000. Land has been purchased and plans are in preparation for a new factory, which will be built immediately.

The Prince of Wales has sent a valuable breast pin, with his initials in diamonds, to Herr Joseph Bayer, conductor of the ballet music at the Vienna Opera House, in return for a copy of the score of his music to the ballet "Die Puppenfee."

Coventry Technical Institute: Horological Section.—The students of the escapement and finishing classes are about to commence making a large model of keyless movements. Intending students may apply at the Institute any evening except Saturday.

Mr. Edison's Exhibits at the Paris Exhibition.—Mr. Edison has been making preparations for the last six months for an exhibition in the Paris Exposition Universelle, which, it is believed, will be the most extensive exhibit of the kind ever shown. He has been allotted 8,000 square feet of floor space in the main building, and here he will show models of all his inventions in telegraphy, telephones, electric lighting, and the phonograph. The principal feature of the exhibition will be an enormous model of an incandescent lamp, forty feet high, the globe being composed of no less than 20,000 incandescent lamp bulbs. The effect, when the light is flashed, will be wonderfully brilliant, illuminating the entire main building.

The Alliance Assurance Company.—The Annual Report of this well-known Insurance Company was presented to the members on the 20th ult. The Life and Fire Departments show an exceedingly flourishing state of affairs; while the Balance Sheet seems all that could be desired. The dividend to members, being the balance of last year's account, is £82,500, after deducting the cost of the business goodwill of the Royal Farmers and General Insurance Company, which has been acquired by the Alliance. Altogether, persons wishing to insure themselves or their property could not do better than entrust their affairs with this prosperous body.

Horological Rating Tables.—These handy time-savers to all who are engaged in rating watches or chronometers, which were published in 1871 by Messrs. Sampson, Low & Company, are now, we understand, out of print, and the publishers would entertain offers for the purchase of the plates. It seems, and we can well understand it, that they were not much of a success from a financial point of view, and only the one edition was published. They should be extremely useful to manufacturers in a large way of business, giving as they do the interval of trial in hours and minutes from one to twelve hours, and showing the gain or loss in seconds and half seconds during any interval from half-a-second up to ten seconds. They are by Mr. L. B. Phillips, F.R.A.S.

Sir John Bennett (Limited).—The business of Sir John Bennett, of Cheapside, E.C., has been turned into a limited liability company. The capital, which we understand, has been all taken up, consists of £90,000 divided into 12,000 £5 preference shares, and 6,000 £5 shares, upon which £3 has been called up. The Directors are:—James Inch, Esq. (Messrs. Maynard, Harris & Co., East India Agents and Bankers), 126 & 127, Leadenhall Street, E.C.; Edwin L. Moore, Esq. (Messrs. Guillaume & Moore, Watch & Chronometer Manufacturers), 24, Spencer Street, Clerkenwell; T. R. Russell, Esq., Watch Manufacturer and Jeweller, Cathedral Works, 18, Church Street, Liverpool; James Wright, Esq. (Messrs. James Wright & Co., Engineers and Contractors), Lombard Street, E.C.; and Sir John Bennett, 65, Cheapside, E.C., who has agreed to remain as Managing Director of the Company's business for 5 years.

The Burmah Ruby Mines.—Mr. Streeter writes to correct an impression, which has, he says, got about that anyone can go and mine for rubies in Burmah. He wishes it stated that the Burmah Ruby Mines (Limited) have the monopoly entirely in their own hands.

Coventry Watch Movement Company.—This Company has now been organised. The manager is Mr. C. Scarisbrick, of Prescot, whose business has been taken over by the company. A second organisation is also said to be contemplated for the manufacture of movements. Coventry is evidently not going to let the Lancashire combination have it all their own way. In reference to these and similar movements that are going forward further north, the *English Watchmaker* justly remarks that the competition thus set up cannot, if looked at broadly, but be advantageous to the English watch trade as a whole."

The Robbery from Messrs. Stauffer.—At Worship Street on the 11th ult., George Grant, 40, and George Grant, 18, father and son, described as watchmakers, of St. John's Road, Hoxton, were charged with having been concerned together in stealing and receiving 45 gold watches, nine silver watches and three crystal ball watches, value £350, the property of Charles Nicolet, trading as Stauffer and Co., Charterhouse Street. The property, it will be remembered, had been stolen from a traveller in the employ of the firm, he carrying them in a handbag, which he was robbed of in the Union public-house, Air Street, Piccadilly. On Grant's premises being searched by detectives, a gold watch, two gold cases, and two silver watches, part of the stolen property were found. In one part of the prisoners' premises a crucible was found, containing a gold chain, some gold buttons, and other jewellery half melted. The prisoners were remanded till the 8th inst. Besides the goods enumerated, £60 in gold was found on the elder prisoner, which it is anticipated will be handed to Messrs. Stauffer.

Death of Mr. E. D. Johnson.—In the death of Mr. Edward Daniel Johnson, which occurred on the 18th ult., at his residence, 119, Highbury New Park, horology has lost an eminent exponent. Until just before he finally retired from business he occupied a prominent place among English watchmakers, and the news of his death will recall to many of our readers, both in town and country, the recollection of a well-known and highly esteemed man. His obituary, which appears on another page, has been kindly contributed by an old colleague and friend.

The Diamond Market.—Owing to the high prices ruling in the *London* market for *rough*, the *Amsterdam* factories were expected to have to work short time. A few foreign buyers of finished stuff have, however, so far prevented this, and up to the present the factories have kept on at full time.

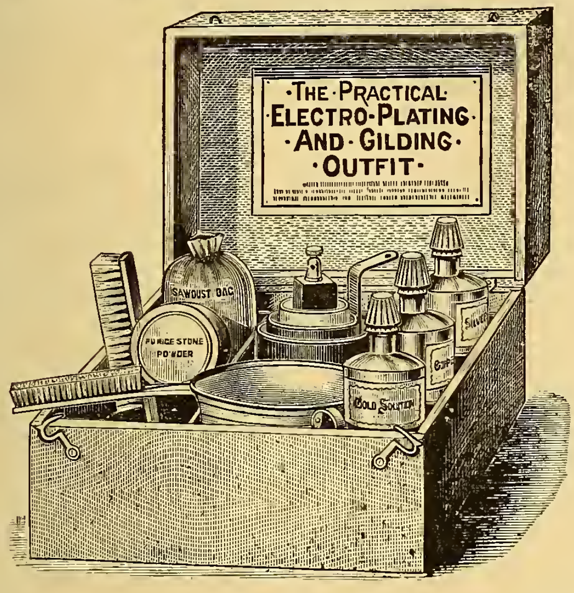
Little speculation is manifest in the *Paris* trade. It is thought that most of the intending purchasers are waiting until after the Exhibition. Few foreign buyers are present, such as are, being as usual American.

The usual Cape steamers arrived during the month, bringing a moderate supply of current stuff for the *London* market, but the high prices quoted prevented any large amount of business being transacted, and caused considerable disappointment to the numerous foreign buyers in attendance.

Metals.—Recent crises and market operations have rendered any quotations for *Copper* of very doubtful value. The latest official quotations we have been able to obtain are: Chili bars, £41, cash. Previously to this they fell to £35, which is the lowest price ever recorded. *Silver.*—A falling off was also shown in quotations for silver; prices for bars being 42½d. per oz., while Mexican dollars were quite nominal. *Tin.*—Fine foreign, cash, Straits, £94 10s. to £95; Australian, £95 10s. to £96. *Lead.*—Spanish soft, £12 12s. 6d.; English, £12 17s. 6d. *Spelter.*—Ordinary brands, £17 2s. 6d. to £17 5s.; special, £17 5s. to £17 7s. 6d.; English soft, V & S, £17 10s., Swansea. *Quicksilver.*—Importers' price, £7 15s.; second hands, £7 12s. 6d.

Trade Notes.

The new catalogue and trade price list of Messrs. C. J. Plucknett & Co., of 29, Poland Street, Oxford Street, just issued, contains a complete description of almost every accessory useful to jewellers, watchmakers and electro-platers. Tools, materials, and machinery are clearly described, and where necessary, the text is further elucidated by means of well-cut blocks. A speciality supplied by this firm is the practical electro-plating and gilding outfit (shown in the annexed illustration). This consists of a Bunsen battery, enamelled depositing cup, scratch-brush, washing-out brush, boxwood sawdust, powdered pumice, copper wires and copper, silver and gold solutions, the whole being contained in a neat polished case. With the outfit easily-understood directions are given, which render its use obvious to the merest tyro, while its price brings it within the reach of all. Watchmakers and jewellers should lose no time in obtaining the catalogue and comparing for themselves.



The Metal of the Future.—Aluminum. Much has been written and but little is known about this wonderful metal—its uses in the manufactures, alloys, &c., and the various methods of its manufacture. We propose to devote some space in the near future to these subjects both from the practical and scientific point of view where they affect the industries, directly or indirectly, represented by this journal. Meanwhile manufacturers, experimenters, and others interested cannot do better than refer to the advertisement, on another page, of the Newport Aluminum Company, of Kentucky, U.S.A., who are prepared to supply this new metal and its alloys in any required proportions and amounts.

Wholesale Traders' Association, Birmingham.—Next to a knowledge of modern business requirements—what to make in obedience to the demands of an ever-changing fashion ; how to push their trade in the face of a vigorous competition ; the acquaintance with general commercial principles ; the commercial status of those with whom they deal, is one of the most important points for manufacturers to make themselves acquainted with. Private means of inquiry are usually quite inadequate to this end, and an intelligence department which offers a ready and sure method of ascertaining the business reputableness of the retailer is obviously the proper channel through which such enquiry should be made. The Wholesale Traders' Association, of Temple Row, Birmingham, whose head offices are at Huddersfield, have adopted an admirable plan for assisting travellers in emergencies, by the issue of "Travellers' Inquiry Handbooks," specimens of which are now before us. Each of these little books contains a list, some hundreds in number, of the Association's agents distributed throughout the United Kingdom. Upon any of these the holder of the book, who must be a subscriber, or someone in his permanent employ, may call for such information respecting the standing and character of persons with whom it is proposed to do business as the agent may be able to give. If anything more is required, communication must be made to head-quarters, at Huddersfield. The plan sketched affords a prompt and unobjectionable mode of making such enquiry, the necessity for which recent events in the jewellery trades require no words for us to further enforce.

Owing to the increase in their business, Messrs. J. Raphael and Co., of 13, Oxford Street, who are advertising in this issue, have found it necessary to greatly enlarge their premises, and to take on additional hands. While their stock has been largely increased in every direction, their business now includes a repairing department, and they announce that they are now in a position to take in every kind of optical jobbing, execute the repairs to same, and return by post the same day. They also undertake to have made on the premises (which their present large and efficient staff enables them to do), every kind of odd optical goods or instruments that are not included in their large variety and stock of the current patterns.

Just arrived home from an extended journey throughout England and Scotland, one of the principal agents for these appliances informs us that there is a marked increase in the favour with which the watchmakers' machine tools and adjuncts, such as the various new lathes (the "Martin," "Go-Ahead," "Triumph," "Progress," &c.), are now being received in every quarter. This speaks well for the future generation of watchmakers and others to whom such appliances should prove useful, and is decidedly a sign of growing intelligence, and an appreciation on the part of the trade of what may be truly termed its latest educational features.

We are in receipt of the Third Supplement to the exhaustive illustrated jewellery catalogue of Messrs. Backes and Strauss (Ltd.), of 64 and 65, Holborn Viaduct, E.C. To those of our readers who are acquainted with the catalogues and supplements heretofore issued by this firm, it is hardly necessary to say more than that the present supplement is fully equal to its predecessors. It is beautifully illustrated, well got up, clearly descriptive, and fully up to date in such specimens of the firm's productions as it deals with, which are : silver goods of various kinds of new and chaste design, high-class diamond jewellery, and gold and silver novelties of all descriptions, including knives, whistles, trinkets, bracelets, brooches, earrings, chains, and other goods too numerous to mention. Every jeweller who wishes to keep himself *au courant* with the latest additions in art jewellery should write for this supplement.

Board of Trade Returns.

The clocks and parts thereof imported during February reached the total of £32,042, in comparison with £35,637 in the same month of last year, and £29,142 in that of 1887. The following shows the sources of the supply :—

	1887	1888	1889
From France	£13,185	£14,496	£11,190
„ United States	£5,456	£8,118	£6,651
„ other countries	£10,501	£13,023	£14,201

The watches and parts thereof imported in February are valued at £60,370 against £28,863 in the same month of last year, and £53,435 in the February of 1887.

The plate and plated and gilt wares exported last month amounted to £28,261 in value in comparison with £25,086 in the February of last year, and £18,784 in that of 1887.

The total value of imports for February amount to £32,311,877 against £29,532,776 in the same month of last year, and £21,513,994 in February, 1887.

The exports of British and Irish produce, &c., for February amounts to £18,609,284. For the same month of last year the value was £18,992,423, and in February of 1887, £17,255,133.

Birmingham News.

From Our Correspondent.

As the first quarter of the year drew to a close, so the number of orders in the jewellery trade appeared to decrease, and the general reports were that business had fallen off considerably in the latter part of March. To a frequenter of the district, intimate with the habits and doings of the numerous personages engaged in the various branches of the jewellery trade, there were not wanting signs that such was the case. Groups of ‘ Master Jewellers ” were to be seen from time to time conversing together at street-corners—a sure sign of a flat period ; I have always remarked this, that when things are a bit quiet manufacturers delight to vie with each other, and try who can produce the worst account. It has been a habit, somehow, from the earliest times of the trade, and appears to be handed down from father to son judging by the way it still flourishes, but in spite of this the interesting fact remains, that the quarter's trading has far exceeded some of its predecessors as a whole, and I think that this is true in nearly every maker's experience for the March quarter.

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The Memorial Stone of the New Post Offices in Birmingham was laid on Monday, March 18, 1889 by the Postmaster General. The silver Masonic Trowel used for the purpose was made by the firm of Messrs. J. Wilkinson and Sons, Pelican Works, Great Hampton Street.

* * *

Many of your readers will be interested to learn that Mr. Ben Nathan, well known in the trade as the smart and able traveller for Messrs. D. & L. Spiers, Vittoria Street, and also very well known in local circles as an amateur entertainer of varied and great abilities, who has been of immense service to charitable Institutions when funds have been required, by giving his services free, has decided to adopt the stage as his profession. He has accepted from Messrs. Rodgers & Son, an engagement to appear in leading parts in the next three pantomimes at the Prince of Wales' Theatre.

* * *

Another well-known member of the trade has departed from among us, and his place will know him no more. Mr. Edward Scott, jeweller, late of 21, Vyse Street, and for about 15 years of Upper Hockley Street, has closed his business, disposed of plant, &c., and gone to America. I believe he expresses himself as quite disgusted with the “ fickle jade ” known as the jewellery trade.

* * *

Mr. Scott's premises, 21, Vyse Street, have been taken with their fixtures by Mr. E. W. Fitter, the eldest son of Mr. H. Fitter, of the firm of H. Fitter and Sons, Hylton Street, gold chain makers and jewellery factors. Mr. E. W. Fitter has been doing the greater part of the travelling for the firm for some years, so will be able to find customers at once.

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Mr. E. F. Braham, jeweller, &c., 100, Spencer Street, has removed to 53, Hockley Hill, Birmingham.

* * *

Mr. Fletcher, late of the firm of Bishton and Fletcher, has accepted the situation of traveller to Messrs. S. Blanckensee and Sons, Frederick Street ; as he has had long experience on the road, and is, I believe, considered a good hand at the work, he will no doubt get his share of such favours as are going.

To Clean Mirrors and other Glass.—Take a newspaper, fold it small, dip it in a basin of clean cold water. When thoroughly wet, squeeze it out as you do a sponge ; then rub it pretty hard all over the surface of the glass, taking care that it is not so wet as to run down in streams ; in fact, the paper must only be completely moistened, or damped all through. Let it rest a few minutes, then go over the glass with a piece of fresh dry newspaper till it looks clear and bright. The inside of windows may be cleaned in the same way ; also spectacle-glasses, lamp-glasses, &c.

Sale of Old Silver Plate.—The very interesting collection of old English plate formed by the late Dr. John Butter Ashford, of Plymouth, which was sold by Messrs. Christie, Manson, and Woods on the 19th ult., contained some remarkable pieces of the Elizabethan time, and which were authenticated by the hall-marks upon them. There were a parcel-gilt tankard, the lid and foot chased with fruits and ornaments, the thumb-piece formed as an arabesque figure and the belt engraved with bands of ornaments, bearing the hall-mark of 1579; it only weighed 16 ounces, but it sold for £370 to Mr. Boore, the dealer, of the Strand ; a black lacquer cup and cover, inlaid with mother o' pearl and mounted with bands of silver gilt, engraved, and the stem formed of three figures, the foot chased with cherubs' heads and fruit, also of the time of Elizabeth, £235—Boore. A circular bell-shaped standing salt-cellar, in three tiers, partly gilt, and engraved with bands of ornaments, bearing the hall-mark of 1599, weight 12½ ounces, 9½ inches high, £325—Jones.

Fashions in Diamonds.—Diamonds, which were seen in great profusion last season, are, if possible, to be still more *en évidence* this year, and fashionable dames are, according to *The Queen*, hastening to have reset any of these gems that they may find lying idle in their jewel boxes. Calling the other day at the establishment of the Diamond Association, 8, Grand Hotel Buildings, Strand, a representative obtained an insight into the fashions which are likely to prevail in jewellery. The Empire modes in dress have brought with them a revival of many quaint and pretty devices for ornaments, amongst which hearts interlaced and true lovers' knots occupy a conspicuous place. A singularly effective ornament was in the form of a spray of flowers, the stemand leaves being all alike encrusted with the finest brilliants, and the flower itself, which was set upon a spring, oscillated lightly on its stem, and reflected every ray of brightness in the most dazzling manner. Diamonds, however, to our own thinking, look best in the simplest possible setting, and when each stone manifestly serves a given purpose. Thus, a rivière of single diamonds, a star in the hair, or to fasten a fichu of lace on the dress, satisfy the eye and give a sense of splendour and utility combined, whereas the same number of gems scattered all over the person without serving any apparent object simply appear ostentatious and unmeaning. It was therefore with pleasure that we observed that for the most valuable diamonds the plainest settings are still preferred, and that stars, Maltese crosses, and single rows, were likely this season to be more in vogue than ever. The horseshoe form is perhaps prime favourite at the present moment, and brooches are made in this shape of various sizes. We were shown on this occasion one that was literally as large as the original article of the stable, each diamond in which was of immense size and value. The general effect, however, was too resplendent to commend itself to a fastidious taste; and we were not surprised to learn that it was expected to find its purchaser rather on the other side of the Atlantic than in London.

Sheffield Notes.

From Our Correspondent.

As a result of the meeting of manufacturers noticed last month, a somewhat lengthy memorial has been drawn up setting forth the views of the Sheffield silver-plate manufacturers on the contemplated abolition of the plate duties and compulsory Hall-marking. This memorial has been presented to the Chancellor of the Exchequer by a deputation of manufacturers, with whom attended the members of the borough and the out-lying constituency of Hallamshire. We are told in stereotyped phraseology, that Mr. Goschen "received the deputation very courteously and promised that the views of the Sheffield memorialists should have careful consideration in framing his budget proposals." There can be little doubt, however, that Mr. Goschen will settle the matter in accordance with the suggestions made to him.

The report of the proceedings in the matter of William Brown, watchmaker and jeweller, of High Street, is melancholy reading. As an instance of the vicissitudes through which old-established businesses sometimes pass, it is, however, not singular. Establishments built up by the energy and business tact of one generation, sadly, too often, go to ruin through the lack of these qualities in a succeeding one. Some few years ago, in consequence of a judicious system of advertising, nobody within 70 miles of Sheffield was allowed to forget that William Brown's watches were the best that could be had. In course of time another Brown made his appearance lower down the street, and it is quite possible that a few careless Yorkshire and Derbyshire farmers got to the wrong shop. This, however, can scarcely have had much to do with the collapse. Shopkeepers of all sorts have passed through trying times of late years and only the strongest have passed through the ordeal in safety. Had old William Brown lived things might have been different, but he didn't, and—things are as they are.

Although, however, the young Browns have come to grief, the business itself is evidently not going to die. Under the title of the Sheffield Goldsmiths' Company, the controlling spirit of which is Mr. F. H. Kilver. so well known in connection with the old firm, it has moved higher up the street to the corner of York Street. There is understood to be money at the back of the venture, and that being so there is no earthly reason why it should not succeed. The new premises were opened for the first time on Saturday, the 2nd of March, when the tastefully set out windows, lit up at night by a brilliant display of incandescent lamps, attracted a large crowd.

The Cutlers' Company of Hallamshire is a very ancient corporation, infinitely more so than the borough of Sheffield itself. In this respect, therefore, the Master Cutler is a more dignified individual than the Mayor. Moreover the Master Cutler must necessarily be a rich man, which the Mayor need not be. The exercise of hospitality, which to outsiders constitutes the principal part of his functions, must cost a lot of money. The Cutlers' feast, where Government big-wigs hold forth on weighty matters of State, is perhaps the best known affair of this kind to people at a distance. It is certainly a very grand affair, but for thorough enjoyableness I fancy a good many Sheffielders would give the palm to those numerous "At Homes" which have marked the present Master Cutler's tenure of office.

What will probably be the last of these re-unions until Lent is over took place on Friday, the 1st of March, and was attended by between 800 and 900 persons. Although the company was so large, the suite of rooms at the Cutlers' Hall afforded ample accommodation, and the arrangement of Mr. and Mrs. Howell for entertaining their guests left nothing to be desired. What with flowers and music, and beautiful pictures, the scene was about as brilliant as could be conceived. The dancing was kept up till between two and three o'clock in the morning.

To be mentioned in ever so incidental a way by a great man gives us Sheffielders the most unbounded satisfaction. In the course of the story of David Copperfield, Dickens makes use of the phrase, "Brooks of Sheffield." Brooks does not figure in the story further than being mentioned, by name, about once, by one of the characters, and Sheffield itself does not figure at all. Nevertheless, that is sufficient for us who are exceedingly thankful for small mercies. The other day, an old gentleman, named Brookes, died here at the ripe old age of 84, and is straightway claimed by our local press as the Brooks mentioned by Dickens. The foundation for the claim seems to rest on the testimony of old Brookes himself, who, as he was a commercial traveller, is very likely to have said so. This evidence, of course, is not conclusive to anybody but a newspaper man, but I daresay many a more important transaction recorded in our histories rests upon as frail a foundation.

Strangers on their way to the centre of the town from the Midland station pass near the top of Howard Street, the extensive silver and electro-plate works of Messrs. Walker and Hall. In a small workshop which formed the nucleus of this establishment more than two generations ago, it is claimed that the first electro-plating ever done in Sheffield was executed. Be this as it may few works in the town have increased in size so steadily and to such an extent. Several years ago the firm had extended their borders so that they were bounded by Howard and Eyre Streets and two lanes which run at right angles to these two thoroughfares. Being thus precluded from further extension in a lateral direction the premises began to increase in height. Now, however, a new departure has been made and they have literally leapt over one of the lanes and effected a lodgment in the opposite block. This has been done by throwing a brick arch over on a level with the top story. From an æsthetic point of view this architectural feature was a daring thing to attempt, nevertheless it has not proved altogether unsuccessful. At any rate no obstacle stands in the way of a gradual extension to Norfolk Street, where the firm will be near neighbours to Mappin and Webb, Richardson and Co., and other smaller but equally prosperous houses in the trade.

This reminds me that the directors of John Round and Sons, Limited, have recommended the payment of a dividend at the rate of 10 per cent. per annum on the amount called up, which will absorb £300 and leave a balance of over £500, to be carried forward to next year.

I hear that the Drapers' Company of London have been induced to make a grant of £1000 in aid of the Technical Classes in connection with Firth College on condition that £750 is contributed locally to the same object. For the honour of the town of course this will be done, although one does not hear much of the Technical School.

There has been some talk of following the example of some other towns and endeavouring to induce the Railway Companies to grant facilities for workmen visiting the Paris Exhibition during the summer. At the time of the Exhibition of 1867 it was possible to get to Paris and back from Sheffield for 33s. The knowledge was largely taken advantage of by silversmiths, and not a few "wrinkles" in the various branches of the trade were brought back in consequence. There can be no doubt that they really do manage some things better in France, and the art of modelling and designing is one of them. It would therefore pay the town as a manufacturing community to move in the matter, which it is to be hoped it will do.

On making enquiries as to the state of trade in the various electro-plate manufactories, I find that although there in nothing like the flush of orders there was two months ago there is really nothing to complain of. One never comes across unemployed workmen, and full time is the rule, the most common exception to which is overtime.

Midland Jottings.

By J. W. Robertson-Scott.

Whatever may be the cause, whether it be the result of Lenten-time introspection, or of the pleasant stimulus afforded by the oncoming of the brilliant crocus "which blooms in spring tra-la," even in benighted Birmingham, or the more prosaic but none the less important improvement in the fortunes of the anti-Hall-mark agitation, there undoubtedly seems to be towards the end of this month of March, a considerable amount of contentment—or resignation—in the breasts of the Birmingham representatives of the various trades, which it is the honour and the pleasure of this journal to serve.

The watchmakers, if little trade has been done this month, refer one—with all the ready dexterousness of political leader writers, calculating "moral victories" after sound beatings at bye-elections—to the smaller amount of business that was transacted in March 1888.

The other traders, remembering that we are still in Lent, take what they can get with thankfulness, and possess their souls in patience until the season of self-denial shall have ended.

In most of my chats, the affairs of the vanished Bishton, the £25,000 that now seems to be in question, and the fight over the Birmingham Assay Office's prosecution test case, have been matters to the fore, rather than the condition of local trade.

On the day upon which I wrote this paragraph, I found several leading men down at the Assizes, where, under the auspices of Mr. Justice Manisty, it is sought to be proved that the various tradesmen who have recently been mulcted in fines of £50—or, with costs, more likely £100—have been, to say the least of it, hardly dealt with.

I write, of course, before the result of the trial has been made known. There is no doubt that there has been a great ferment locally over these prosecutions. I should not like to say how much has been subscribed—I did hear £400 mentioned.

The subscribers to this fund make no bones over expressing their feeling in conversation concerning this matter. They talk about persecution rather than prosecution. They say that after fifty years' laxity, and in view of the ignorance that prevails as to the law, it is monstrous to swoop down indiscriminately, and extort such big sums in hard cash as the fines and the *et cæteras*—or the *et cæteras* and the fines.

Those traders who refuse to swallow entirely the plea of ignorance, or smile in doing so, none the less agree that the Assay Office people have been harsh, that Mr. Buckley's running about the country was injudicious and ill-advised, at the least, and that a simple demand for apologies, the debiting of the advertising expenses to the offenders, and the issuing of an explanatory, a minatory, and even a hortatory (if they liked) circular to the trade, would have been in better taste. I am told that, if the case goes against the traders, the Court's decision will be appealed against. I heard of two firms that have been served with writs, declaring their intention to fight before, if not instead of, paying up.

It is to be hoped that, in the event of the judge siding with the Assay people, the terrible things that a genial Jeremiah (this in a Pickwickian sense, of course) hinted to me, may not come true. There were to be warrants out, not only for the shopkeepers, but for the manufacturers, the merchants, and the exporters; even the books of the distributors of the rings were to be examined, and the offenders thereby sought out; the fines were to fall as thick as thick could be, and Mr. Goschen, if he did what he ought to do, would take a penny off the income-tax payable by the jewellers' *quartier* in Birmingham.

It is a curious commentary upon the anti-Hall-mark crusade, but, of course, an explainable enough circumstance, that the Hall-mark is steadily increasing in the favour of the general public. I noticed that the extensive window of one of the Birmingham shops bore across it, in big white letters, that all goods sold were Government Hall-marked. I went in and asked the tradesman to tell me if he really thought the inscription would help him in the way of customers. He had no two opinions about it. As for such of his goods as were not warranted by Government, he would himself present a guarantee of their quality to purchasers.

Competition is clearly bringing Hall-marking more and more into vogue. The public, complaining that it has been so much gulled, is glad of the official warranty. People are even willing to, cheerfully, give a better price for articles, that bear upon them the security of the Hall-mark.

Among jewellers one may notice a growing disposition to adopt the Hall-mark. In the case of unmarked goods it is evident that there can be no generally prevailing standard of quality. The honest trader may produce articles which are genuinely what he describes them to be; the man intent on thick-and-thin competition and close cutting, or the person whose conscience has been superannuated, will, just as certainly, put no more gold into his goods than he can possibly help.

The jeweller has a case against the duty in contradistinction to that of the silversmith, and even of the ringmaker. Certain articles are subject to duty, and certain articles may go scot free. But to draw up a list of what is included in either class—*c'est impossible*.

The subtle distinctions that exist between, say, a chain, a pendant, and a locket! A jeweller has an order for a certain design. He is undecided as to its liability to duty. The only way for him to inform himself is to run the risk of a prosecution, and the evil offence of the Revenue robbing being brought home to him, the judicial decision becomes a precedent.

If the jeweller, before proceeding with his piece of work, takes his design to the authorities and asks, "Is this particular article liable to duty?" he receives for answer—"We do not know. We should not, at any rate, begin to prosecute you because of your production. If anyone, however, thought well to inform against you, there would be no other course open to us but to take the charge before a judge, and you are then liable to an adverse decision."

Surely, with the power of fining and imprisoning, there should be a schedule of the various acts which will bring down fines and jail-lodgings upon Her Majesty's lieges in the jewel trade.

Readers will have noticed the adoption of a Merchandise Marks Act, on the principle of our own enactment, which is the foe of margarine butter, in Sydney, and the prospective advancement of similar restrictions in other colonies and in Germany.

It is no wonder that the Colonials should desire to know the port of origin of their imported jewellery, whether goods have begun their voyage at Hamburg or at Southampton. While, of course, our Antipodean brethren are as thorough business men as we are, it cannot be gainsaid that other things being equal, they prefer English goods to German. First, because "blood is thicker than water," second, and with much more force, English jewellery is better than German.

Talking about Sydney, a jeweller was telling me that a while since he met an informed man from the capital of New South Wales, and this Colonial gave it as his serious opinion that there were probably not half-a-dozen really Hall-marked articles in his native city's shops.

The statement is startling, but my informant furnished the explanation as well as the recital of such state of things. He himself knows a man who thought nothing of showing him a drawer full of punches with which he was accustomed to stamp his wares any carat he decided upon. Other people did it, he must do the same.

We have, to the exclusion of Germany, as has been indicated, the main trade with Australia. I am afraid that if things were the other way round and the Teuton had managed to elbow out the Saxon, and had then used his advantage to send out such "bogus" goods as some of our manufacturers who act on the principle of "every jeweller his own Hall-marker" appear to be doing, we should read with feelings of honest pride and complacency "revelations" of the rubbishy, humbugging German trade practices, and rub our hands offering thanks to our national lucky stars that we were not as the unscrupulous traders of another country. *Verbum*—to thee, Oh, say, soul-respecting, *satis est*, surely.

Two, if no more, of the Yankee Presidents were "inaugurated" in homespun, and the U. S. A. folk have decided that *their* ruler shall be addressed as plain Mister, and every citizen of that "glorious country" of due age shall be eligible alike to the Presidency and to the privilege of shaking hands (or of partially ringing off the hands) of the temporary occupant of that office. But brother Jonathan, with all his declarations in favour of Quaker simplicity and the dignity of unadorned man, is admittedly "great" on decorations in the way of medals, clasps, and such like. Was it not 25,000 persons on the Democratic side and 28,000 on the Republican side that, arrayed even to the extremity of their umbrellas in all manner of decorative distinctive badges, promenaded at President Harrison's "inauguration"?—I believe so.

This *à propos* of the unmistakable fact that the taste for badges of various sorts and for all kinds of occasions is, to say the least of it, becoming a reality on this side the water also. Here are the Imperial federationists already adopting—so their jewellers say—a badge to publicly show forth their principles and to preserve on all occasions their loyalty to the league over which Lord Rosebery presides.

Again, on walking into Messrs. T. and J. Bragg's, I light upon Mr. Tonks reading, in business hours, not the *Watchmaker, Jeweller and Silversmith*, as I should have excused him doing, but the organ of the Primrose League!—his apology for such unbusinesslike behaviour being the fact that his house is engaged upon the manufacture of a whole series of badges and orders of mysterious import of, I forget how many "degrees" in Primrose Leaguery.

But it is not only the Conservatives who have gone in for such political badges. I noticed the fact chronicled that the Parnell Commission proceedings had given a fillip to the sale of a certain device in pearls and diamonds, representing a woodman's axe: and for the existence of this party ornament the Liberals are surely responsible.

I noticed when in Mr. Day's, a curious tie pin, which, though it is scarcely new, some of my readers may possibly not have seen. There are two stars of stones placed over one another and kept in motion in opposite directions by means of a watch movement. The effect in the evening is, as the French say, sufficiently startling.

Mr. B. J. Round (Messrs. B. J. Round and Son), whose name is identified with the valuable sand-blast gilding process, has had an extraordinary number of low-priced German silver cigarette cases and match boxes through his hands of late. A good deal seems to be doing just now in this particular line.

Messrs. Charles Westwood & Sons report that they are going more extensively into beads and chains.

I find that Mr. A. Sydenham has moved across from one side of Frederick Street to the other, that is from 45 to 26.

Messrs. G. E. Walton & Co. are going to be represented at the coming Birmingham Electrical and Industrial Exhibition by a good show of their goods.

Messrs. Swinden & Sons will also be putting in an appearance. They will be represented by a display of non-electrical watches, grandfathers' clocks—their hobby in this direction is well known—and trade tools and materials.

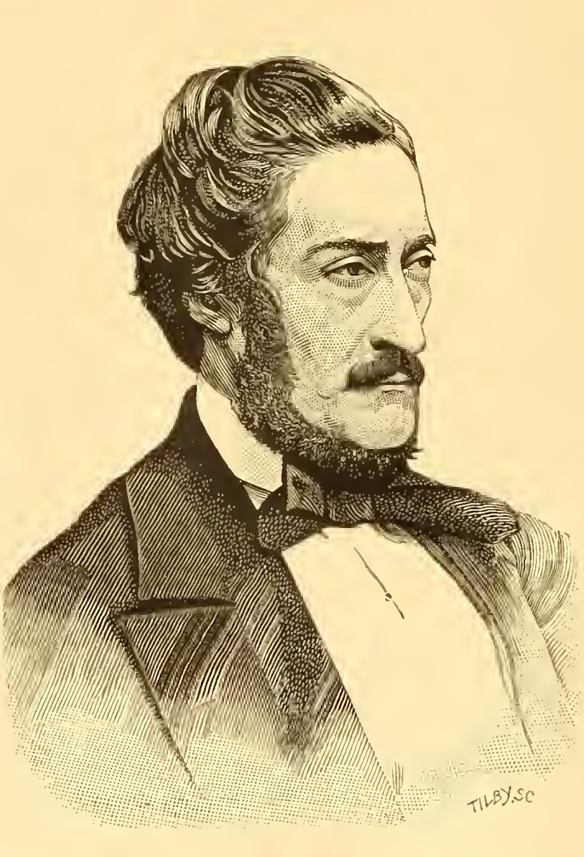
From all I can hear the Exhibition seems to give promise of being a success. The space is rapidly filling up, and I have been told of a difficulty being experienced in getting good places. But more of the Exhibition next month.

The late E. D. Johnson.

To write a biography of Mr. Johnson with a full account of all the transactions in which he has been engaged would be to write a history of the watch trade of England for the last fifty years and something of the domestic life of Clerkenwell for a portion of that period; this would be unsuited to these columns, but I am sure it is due to his memory and will be interesting and I hope useful to recall some of the early struggles, experiences and successes of a man so eminent in his profession as E. D. Johnson.

He was born in London in 1816, and was taken to Exeter when only three months old. His father, a solicitor, designed him for the medical profession, but dying when the boy was only twelve years old his hopes of a professional education and career were at once scattered, and during the remaining years of his minority he underwent all the miseries of a fatherless boy and a clockmaker's apprentice. His uncle having apprenticed him to a watch and clock maker, of Cardiff, his life during his apprenticeship was a long, dreary round of uninteresting labour with scarcely any opportunity of learning his trade, and would have crushed the hope and ambition out of a less ardent and ambitious spirit, but hope and freedom came at last, and he made his way to London as soon as he had obtained his indentures, where he found himself in the position of so many self-made men, with the traditional half-crown in his pocket, at all events with very slender means; and so little had he learned or cared for watchmaking, that he cherished the hope of being able to study medicine: but the stern reality of life compelled him to decide upon following the profession of which he knew most, and so he settled down, like so many other country-bred men, to criticise and examine the work of others as a watch examiner. Perhaps the worst feature of the old system of watch manufacture was that the workman of each branch left as much of his part of the work to the man that followed him as he could well do without immediate detection (I am speaking now of the commoner sort of work and of the sometimes very poorly paid workmen); this slurring over or scamping as it was called left so much for the examiner to rectify that the business of examining was the best possible school for a young man with industry, a knowledge of mechanics, and an ambition to be something more than a journeyman watchmaker—and young Johnson made the most of his opportunity, beginning very low down in the scale, working for a manufacturer in the vicinity of Houndsditch, and gradually ascending to the position of foreman and manager of some of the best houses in the city and West End.

During the ten years spent in these various capacities and establishments he had made good use of his keen intelligence and had become something more than a first class workman; he was an accomplished watchmaker. In 1847 he commenced business as a manufacturer of watches for the trade, and I believe Mr. Cross, of Cornhill, was his first customer, but the American trade had long been the El Dorado of English watchmakers, and although such firms as Adams and Cooper made up good work, the design and construction of most of the watches that were made for the American market were such as must in the end have destroyed the reputation which English watches had obtained there. Large flat full-plate watches with compensation balances and frequently with duplex escapements, very strong mainsprings, and very thin and weak chains was the general pattern of these watches; and as they were sent out ready to be put in American-made cases, in order to avoid the duties levied on completed articles by the United States, in addition to the inherent defects of the movements, the unskilful casing of them must have made many of these watches practically useless before they reached the wearers. Mr. Johnson saw how this could be altered and improved; by making up sounder work, by using higher pillars in his movements; and with his indomitable energy he had in a very short time, I believe, the largest trade of any English watch manufacturer with the United States. All the watch movements sent to the United States bore the name of the makers (unlike those sold by shopkeepers in England, who place their own names on watches they sell); this gave the makers an incentive to the production of good work. Mr. Johnson was fully alive to the advantage thus obtained and by his critical and careful superintendence of the work sent out made a reputation not only amongst the factors (or as the Americans say, jobbers), but amongst the public, and the Johnson watch became in great demand. The increase of his American trade, however, did not interfere with his activity. In 1853, he removed to Wilmington Square, Clerkenwell, to extensive workshop premises, where he remained while in business, and so successfully did he push his home trade that there was scarcely a watchmaker of importance in any city or town of Great Britain or Ireland that was not his customer; as, he often told me, he had always something new to show them. He patented many inventions and improvements in watches and in connexion with ships' chronometers; amongst the most successful were his universal and automatic seconds watches, these being the precursors of the modern chronograph; he also made many experiments on the isochronism and compensation of the pendulum, and found time to be a member of three of the learned societies, but the work which went nearest to his heart was the creation and development of the British Horological Institute.



The improvements made in the lever escapement by Savage and others had given such a character to the English lever watch, that the English watchmakers had practically a monopoly of the world's markets for the best class of watches. This fact was not lost on other nations, and in France, Germany, and Switzerland, schools were established, some of them subsidised by the Government for the scientific study of the principles that underlie watchmaking. English watchmakers were prosperous and so they were happy. They did not care to trouble about the future, although some of them saw the need of a thorough reform of our system. Mr. Charles Frodsham in some of his lectures called attention to the want of a proper institution for training watchmakers, and others may have talked of it, but to E. D. Johnson the credit of being the founder of the Institute undoubtedly belongs, and as this has been denied, or at least the credit has been assumed by others, I think I can prove, by the documents in my possession, what I have asserted to be the truth.

Sometime in 1856 Mr. Johnson, who never went to sleep over any project he had in contemplation, issued a circular to the watch manufacturers asking them to meet at his house and discuss, and if possible decide upon the formation of a society which would raise the status of the trade and improve the condition of the workmen. This circular, in the language of one of the principal manufacturers, was laid upon his desk and with that generosity and public spirit so characteristic of some trade competitors, treated as an impertinence and of course was not responded to by any of those addressed. In March of the following year Mr. Johnson's workmen gave him a complimentary dinner at the Belvedere Tavern, when the result of the circular was touched upon, and Mr. Johnson proposed, that as the employers would not assist him the workmen should do so, and the formation of a society was determined upon there and then and a subscription made to defray preliminary expenses.

I have the original document before me, with the signatures of the first twelve members, which I give here. They are E. D. Johnson, J. Trewinnard, H. Richards, W. Whiting, W. Dart, George Dunkley, Fredk. Potter, Daniel Metcalf, Thomas Catherwood, Joseph Purser, Wm. Dunkley, and J. Wisley.

On the 16th of February of the following year, 1858, I find from a report in the Horological Journal, "that a number of persons in the watch trade met and formed themselves into a preliminary committee, &c." A good deal of work must have been done in the meantime and some jealousies smoothed down, as an address was issued by this preliminary committee signed by Mr. Breese, sen., the coadjutor and friend of Mr. Johnson, as honorary secretary, and at a public meeting held soon after, this preliminary Committee was interested with the duty of "organising the Institute." Mr. Johnson was appointed treasurer at this meeting, but the old jealousies reviving, he was superseded by Mr. R. R. Hux being elected to that office in 1859. This of course caused Mr. Johnson to retire from any active work in the Institute for some time, but he was afterwards elected treasurer, and in 1860, he was elected vice-president, a post which he held until the loss of his sight compelled him to resign it; although he still desired to keep up his connexion with the Institute by keeping his name on the Council. He had, at his own cost, the portrait of Thomas Ernshaw engraved on steel, after the picture by Sir Martin Archer Shee, P.R.A., and amongst many other contributions to the Library and Museum, he presented several of these engravings to the Institute—some of which, I believe, are still to be obtained from the secretary. He contributed largely to the new building which he could never see and offered a considerable sum for a portico, which the trustees did not find themselves justified in accepting under the circumstances. Mr. Johnson was for many years one of the most active and progressive members of the Clerkenwell Vestry, when that body was not so famous as it has become of late years. He contributed generously to all the trade charities, and was the principal founder of the Clerkenwell Benevolent Society, of which, he was the president, a society founded for the distribution of bread and coals at Christmas. The great success of this association is mainly due to the labours of Mr. Johnson's family in the early days of the society.

For many years Mr. Johnson had suffered from a painful disease of the eyes; one of his eyes had to be removed in 1866, and it is simply a marvel how he kept to his many laborious engagements for the greater portion of the next eleven years, when in 1878, an operation on his remaining eye deprived him of sight altogether: after this he lost all his vivacious temperament, cared little for the society of anyone but his own family and a very few friends; and it was a lesson and a great privilege to those who were in the habit of visiting him to see with what uncomplaining cheerfulness he bore what to him of all men must have been a great deprivation. He grew gradually weaker and died seemingly without pain on the 8th of February, 1889, lamented and positively adored by his large family; he was buried in Highgate Cemetery.

Mr. Johnson had in his vigorous days taken part in very many movements that came before him, and although I do not believe he had any enemies he had many opponents; he was impulsive, severe in his criticisms and sharp in his speech; he had no fine words for shams or foolish fads, and he gave no quarter to workmen who tried to evade their part of a contract while he loyally carried out his, but he was a most true and trusted friend, very sociable in his disposition, and most loving and indulgent to his family.

DAVID GLASGOW.

Silver Assaying.

In the early part of the year, when the subjects of the Plate Duties and Hall-marking were occupying a good deal of attention in some quarters, a correspondent of a local paper—wishing to learn something of the true state of the case—called on the Sheffield firm, Messrs. Turner & Co., silver refiners, of Eyre Street, Sheffield, and had an interview with the senior partner. After some half-column or so of general introductory remarks, he relates his experience in substance as follows:—

The senior partner of the firm was seated at a bench when I entered, testing the wonderfully sensitive scales which are used to accurately weigh the quantities to be assayed. The scales are enclosed in a glass case with sliding front, so as not to be affected even by a breath of wind; are furnished with a needle index, and knife edges balanced on agate bearings. Having satisfied himself that the scales have not become affected since the last using, he proceeds to the actual process of assay. On another bench are some sheets of silver and various blanks, and these are to be tested just as if they were finished goods. From the edges he takes a thin strip or scrapes a few shavings at random, explaining that an assay master would do this, having liberty, if he chose, to scrape a little from every separate part of the articles sent. Thus, from a teapot he could scrape a little from the handle, spout, lid, body and knobs, but from a tray made from one piece of silver, he would only scrape in one place. These scrapings are then all mixed together, the only care being that the scrapings from one manufacturer's parcel are not mixed with those from another house. Of course, only a very small piece is taken at each scraping, and those from perhaps a 100 ounces of silver, making several dozen different articles, might not weigh much more than a pennyweight. Having secured the scrapings, the assayer returns to the scales, being exceedingly careful not to allow any trace of dust or other foreign matter to be mixed with the scrapings, or the result may be inaccurate. Sitting down before the scales, the assayer, having decided what weight he will assay—say 1 dwt.—takes what is technically known as a "proof plate" and accurately weighs a piece of that weight. I am told that a "proof plate" is a piece of standard silver supplied by the Government to the assay offices, and which, by numerous experiments, is known to be exactly ·925, and neither more nor less than this degree of fineness. Its use is that one or more pieces of "proof plate" are put into the furnace to be tested with exactly the same weight of scrapings from the articles sent for assay. It is known that in the process of assaying there will be a certain loss of weight by the separation of the alloy from the silver. The degree of fineness of the "proof plate" being accurately known and a precisely equal amount of scrapings ("goods" we had better call them) being treated under exactly the same conditions in the furnace, it is assumed that the "goods" will, if of the same fineness, lose in precisely the same proportion, and that if they do not, the difference in weight brought out in decimals will represent the standard of fineness—that is to say if the "goods" are heavier than the "proof" they will be above the standard quality—·925—or *vice versâ*.

Our assayer weighs 1 dwt. of "proof plate"—of course in this case it is not Government proof, but his own; that, however, is immaterial—and then he proceeds to weigh the same quantity of scrapings from the goods. It is a very delicate operation, as may be gathered when I record that the scales showing a little surplus, the assayer took a small scraping with the pliers, and, drawing it twice across a smooth file, returned it to the scale, when it just balanced. That operation was repeated four times with the "goods" and twice with the "proof plate," and then the articles were prepared for the furnace. Carefully distinguishing the six varieties, each was wrapped in an envelope of pure lead of a determined weight, and then we proceeded to the furnace room to test by the operation technically known as "cupellation." In a muffle furnace, heated from the top were six small cupels or crucibles of calcined bone ash, highly porous in structure. These had been heated to a bright redness, and were arranged in two rows thus—

G P G
G P G

With a pair of tongs the assayer placed the metal into the cupels, the proof plates in the centre, and the goods on either side as shown above, the idea being to secure uniformity of treatment. In a few seconds the lead fused, and gradually it and the alloy were driven off by the heat, and in a little while in the centre of the cupel there glowed a small round bead of pure silver. The practised eye of the assayer detects the precise moment when the "working" is finished, and the cupels are removed to cool. Then we journeyed back to the scales, and the crucial point came in, for we were to know now whether the goods have "passed." The proof bead being carefully examined to see that no traces of the cupel adhere to it, is weighed, and then the goods are weighed against this bead. Three out of the four were a trifle heavier, so they passed; and if this had been an official assay they would have been passed on to be Hall-marked. The fourth bead of goods, however, was "light," and in order to see how light, the assayer works out the proof bead into decimals. It comes out ·916, and as it was certainly ·925 when put into the furnace, the assayer knows it has lost 9 milliemes in cupellation, which must be added to the "goods" tested under the same conditions. Tested thus, two lots of the goods come out at a trifle over ·928, one at a little under that, and then the assayer tests the light one. It comes out when the nine millimes are added as "compensation" at a shade over ·870, and the assayer says that certainly these "goods" would have been smashed at the Hall, though, he adds, that from the first he knew the metal was not standard, and introduced it merely to show me the difference.

Questioned as to the breaking of goods sent for assay, Mr. Turner says he doesn't believe in the charges that have been brought against the Assay Masters in such a wholesale manner. Either the persons so complaining have been exaggerating small grievances or they know little of the actual work of assaying. You will agree with this after what you have seen this morning. Take for example the statement of the manufacturer who talked of a hundred silver teapots, worth £1000, smashed at the Hall because a base metal knob or a piece of wire was by accident attached to one of them. Now I don't think any manufacturer would send 100 teapots for assay in one parcel. I never heard of its being done. But presuming it is true, see how the public are misled by the plausible story that this is very unfair, and that the Assay Master ought instead to return or break the particular article which is below standard. You know now that it is impossible for the Assay Master to tell which particular article is at fault. Suppose the scrapings from those 100 teapots were made into two packages in the furnace, and came out at ·918 or ·920, the Assay Master could not tell any more than you could which particular teapot had a base knob or a base handle, and only by a hundred separate and distinct assays could he distinguish, and surely he is not to do that.

"Do they smash the goods on the first assay?" I asked. "Certainly not," replied Mr. Turner. "The Act of Parliament says that the Assay Master must be satisfied, and no doubt his powers might be used in an arbitrary manner; for practically there is no remedy for the manufacturer whose goods are broken up. But in Sheffield, at least, I know that the practice is not to break up goods on the first assay, unless the result is a very low one indeed. The Assay Master does not delight in smashing or defacing goods, as any unprejudiced person will readily believe, and he often takes exceptional pains with them."

"Is there any margin at all allowed?" "No, there is not; and here I think the law wants altering. If the English Halls were allowed, as some foreign Halls are, to mark goods which on assay come within five millimes of the standard the public would not suffer, and the manufacturers would find it an enormous convenience—it is called 'tolerance' in France, and it is 'tolerance' the English silversmiths want. It would mean that an article which assayed ·005 below standard would still be Hall-marked—·005 only represents 1 dwt. in the pound troy. Standard, as you know, contains 11 ozs. 2 dwts. of fine silver to 18 dwts. of alloy. This 'tolerance' would effectually prevent the breaking up of a parcel of goods for any trifling defect, whilst still preserving the public from fraud."

"Would it not practically mean the debasement of the English standard from ·925 to ·920?" "Not if accompanied by a fine on goods on which 'tolerance' was exercised. That is to say the Hall, though marking goods which were under ·925, but above ·920, might fine the manufacturer one penny per ounce which, of course, would effectually prevent them wilfully debasing the standard. I know for a fact that in working silver of ·927 fineness repeated heating and hammering has sufficiently brought the alloy to the surface, that scrapings have assayed slightly below standard, while a piece punched out of the article has assayed ·927. That gives you an idea of the dangers to which silversmiths are liable, and the desirability of 'tolerance.'"

Mr. Turner was then asked about compulsory Hall-marking, and gave it as his opinion that compulsory assay was vital, and must be retained, both in the interests of the trade, to guard against unscrupulous competition, and in the interests of the public to protect them from fraudulent plate. He pointed out that at present Hall-marked goods were always readily saleable, and said that his firm would give to a *bonâ fide* person for old spoons and forks within a trifle of the market price of silver. And they would fearlessly buy on the Hall-mark without assay. But unmarked goods would be of very little value second-hand, and for refining could only be bought after melting and assay. As to piracies of the Hall-mark, doubtless they did exist, and he believed that in his 25 years' experience in the trade he had come across one or two. But they were rare, so rare that he was willing to buy on the Hall-mark, unless his suspicions were aroused by other circumstances, and certainly he had seen more spurious half-crowns and sovereigns than spurious pieces of Hall-marked plate.

On the question of having more than one standard of silver, Mr. Turner agreed that the point was worth considering, but such an arrangement would, he said, very seriously increase the difficulties of manufacturers. It would necessitate their keeping stocks of various qualities of rolled silver and wire; the differences in quality could not be distinguished at sight by the most practical silversmith. Beyond this, the inclusion of a piece of ·800 silver by accident when fashioning an order for ·925 would result at the Hall in one of two things. Either the whole parcel of plate would be smashed, or all the articles would have to be marked ·800, resulting in a great loss.

Prosecution under the Merchandise Marks Act.

FOREIGN-MADE ENGLISH WATCHES.

ON Friday, the 18th ult., at the Mansion House, Mr. Alderman Evans resumed the hearing of the summons taken out by the London Watchmakers' Trade Protection Association against Messrs. Kendal and Dent, jewellers and watchmakers, of 106, Cheapside, who were charged with an infringement of the Merchandise Marks Act, 1887, by having sold a watch to which had been applied a false trade description as to the place and country in which it was made and produced—the misrepresentation being the statement to the purchaser that it was made and produced in England.

Mr. J. Forrest Fulton, instructed by Sir Albert R. Rollit, M.P., appeared as counsel for the prosecution, in the interests of the London Watch Trades' Society; Mr. Walter Beard (of the firm of Messrs. Thomas Beard and Sons, solicitors, Basinghall Street) represented the defendant.

As at the former hearing of the summons, the court was crowded, and great interest was manifested in the proceedings by the large number of Clerkenwell masters and working men present throughout the hearing.

The case was first heard at this court on 15th ult., when it was stated by the learned counsel that the summons was taken out at the instance of the important Association which he represented, under sub-section 2 of section 7 of the Merchandise Marks Act, 1887, which provided: "Or that every person who sells or exposes for, or has in his possession for sale, or any purpose of trade or manufacture, any goods or things to which any forged trade mark or false trade description is applied, or to which any trade mark, or mark so nearly resembling a trade mark as to be calculated to deceive, is falsely applied as the case may be, shall, unless he proves that having taken all reasonable precautions against committing an offence against this Act, he had at the time of the commission of the alleged offence no reason to suspect the genuineness of the trade mark, or trade description. That on demand, made by or on behalf of the prosecutor, he gave all the information in his power with respect to the persons from whom he obtained such goods or things; or that otherwise he had acted innocently, is guilty of an offence under this Act." For a long time past watches had been sold in this country in large numbers purporting to be of English manufacture, whereas they were partly or wholly of foreign make and production. In this way the watch trade of the country—and in Clerkenwell, and other districts, one of its chief and most important staple industries—was greatly prejudiced, and as a consequence of the purchase of inferior articles the buying public were also materially and injuriously affected. The allegations of his clients were that the defendants, Messrs. Kendal and Dent, had sold that as an English watch, which had been shown by the evidence he called on the last occasion, to be supplemented and confirmed by witness who would be examined to-day, to be of foreign manufacture in its principal movements. The Merchandise Marks Act, by its seventh section, had made special provisions against the false description of watches, and had provided in effect that where a watch case had upon it any words or marks which constituted a description of the country in which the watch was made, these words should be taken *prima facie* to be a representation that the watch was made in that particular country. It was also provided that the expression "watch" should be taken to be all that portion of a watch which was not the watch case. On January 16 a representative of the London Watch Trades' Association, named Moore, bought at the defendant's shop a silver lever watch for £3 15s., which was described in their catalogue as "a gent's English lever watch." It bore on the face of it the words, "Kendal and Dent, London," but on an examination it was discovered that the principal portions of the works of the watch were of foreign make (probably Swiss), and that the case was of Birmingham manufacture. In the circumstances these proceedings were taken. As the learned Alderman would probably remember, various experts in the watch trade had been examined at the last sitting, and they gave evidence that the works of the watch were produced abroad, and that the article, wholesale, was worth about £1 5s. His contention was that, although the offence here charged came under the provisions of that section of the statute which dealt with false trade description, the matter in dispute was not altogether a question of trade marks, but one of misrepresentation as to the make and manufacture of the article sold. The seventh section of the statute explained in cases of this nature: "Where a watch has thereon any words or marks which constitute, or are by common repute considered as constituting a description of the country in which the watch was made, and the watch bears no description of the country where it was made, those words or marks shall *primâ facie* be deemed to be a description of that country within the meaning of this Act, and the provisions of this Act, with respect to goods to which a false trade description has been applied, and with respect to selling or exposing for or having in possession for sale, or any purpose of trade or manufacture, goods with a false trade description, shall apply accordingly; and for the purposes of this section the expression 'watch' means all that portion of a watch which is not the watch case." The watch which was sold on January 16 to Mr. Moore at the establishment of Messrs. Kendal & Dent was of foreign manufacture, and it was, therefore, an infringement of section 7 of the statute.

The learned counsel then called Mr. Frankson, who gave evidence corroborative of that already tendered by Messrs. James Henry Newman, Frederick Moore, and other members of the London Watchmakers' Protection Association. He agreed with the witness Mr. Frederick Moore, after an examination, that portions of it were Birmingham machine-made, viz. :—the pillar plate, top-plate, the fittings, the small cocks and screws; whilst the other parts—the centre wheel, the centre wheel pinion, the third wheel and third wheel pinion, the fourth wheel and the fourth wheel pinion, the escape wheel and the escape wheel pinion, the pallet staff and the pallets, were of foreign manufacture. The cock jewel, the main-spring, and the seconds hand were not only foreign but foreign made. These were the most expensive parts of the mechanism of the watch. The value of the watch was about 25s., and from investigation he was able to point out the portions made, produced, and put together in Birmingham.

Mr. Fulton: Those parts which were the most expensive and enhanced the value were made abroad?

Witness: Yes.

Mr. Fulton: If it had been made in England by an English workman the article would have been more valuable, and its selling price increased?

Witness: Yes. He certainly did not think the vendor was warranted in charging such a sum as £3 15s. for it.

Cross-examined by Mr. Beard: It was not impossible to a practical workman, after an expert examination, to discriminate between the foreign and English parts. By looking at the works he was enabled to tell its origin. He was not aware that there were foreign workmen in England carrying out their own system and principles of workmanship. There might be foreign workmen in this country, but he had no knowledge on the subject; and if there were such, he was unable to describe their peculiar process of workmanship. He could not say if Swiss workmen in England adopted the English fashion in finishing watches. Such instances had not come within his knowledge. Parts of the watch under consideration had been made in England, that was to say, foreign made in Birmingham.

Mr. Beard: They are English, but foreign made.

Witness: Foreign made, and represented as English manufacture.

Mr. Beard: Do you suggest that an ordinary watch dealer or shop-keeper who sells watches is able to tell by looking at a watch, whether it was English or foreign make?

Mr. Fulton: I object to that question.

Mr. Beard: Do you know the English Watch Company in Birmingham?

Witness: I have heard of them.

Mr. Beard: Is it a good company?

Mr. Fulton: How can he tell that?

William Macfarlane, watch finisher, was then called by Mr. Fulton, in corroboration of the evidence already adduced. He had served his apprenticeship at the trade, in which he had had 40 years' experience. He had made an examination of the watch on the desk before him, and he agreed with previous witnesses, to whose evidence he had attentively listened, as to the parts which were foreign. He commenced with the statement that the most valuable parts were made abroad and the watch finished by English workmen. He could not say if there were foreign workmen in England following out their principles and system in their trade.

Mr. Beard: Would it pay English workmen to spend their time in doctoring work?

Mr. Fulton could not see how the witness could answer that question.

The witness could not agree with the suggestion that the barrel was of English make.

Mr. Beard: You are in doubt; but you can swear that it is not English made.

The witness was convinced that the parts already indicated, and which enhanced its value to a purchaser, were foreign manufacture.

He explained the difference between machine-made and foreign-made work.

The Alderman said the witness had given his evidence in a very fair and intelligible manner.

Alfred Peters, watch finisher, of Rahere Street, Goswell Road, 40 years actively engaged in the trade, in reply to Mr. F. Fulton, gave generally, corroborative testimony as to the foreign origin of the watch purchased from Messrs. Kendal & Dent, and shown in court. He had not the slightest doubt in agreeing with the previous witnesses, after examination of the works, that the pillar plate, top plate, the fittings, the small cocks and screws, were Birmingham machine-made. The centre wheel, the centre wheel pinion, the third wheel and third wheel pinion, the fourth wheel and fourth wheel pinion, the escape wheel and the escape wheel pinion, the pallet staff and the pallets, were foreign-made. The cock jewel, the mainspring, and the seconds hand were all of foreign manufacture and hand-made. The portions of the watch that he had indicated were the most expensive; they were virtually the whole of the watch; the other plate simply holding the works together.

In reply to Mr. Beard, he reiterated his statement that the most important, essential and valuable parts of the mechanism were of foreign design, and manufactured, not hand-made. He could not tell the nationality of the plates.

Mr. A. Elliot, a watchmaker of 35 years' standing in Red Lion Street, was next examined, and stated after an examination of the watch he formed an opinion as to the foreign manufacture of the centre-wheel and other component parts spoken of by Mr. Peters.

The witness was very briefly cross-examined by Mr. Beard, but his evidence was unshaken.

Mr. W. Beard, for the defence, contended that no representations as to the origin of the watch were made, and that the inscriptory words "Kendal and Dent, London," were only to denote the names of the vendors. He argued at some length that no one had been injured by the transaction. It was never suggested in any shape or form that this was an English-made watch; but at the same time it was only natural that the watchmakers of Clerkenwell, in the interests of their staple industries, and to protect what they considered was an injury to their craft, should institute these proceedings. It had been stated in the course of the hearing of this case that his clients had known all about these goods, or in other words that an article was sold with the express purpose of deceiving the public. In answer to this he should rest his defence on portion of sub-section 2 of the statute, and ask the court to believe that the defendants were innocent in what they did in this matter; and that, therefore, they should be held blameless and not guilty of any wilful infringement of the Act of Parliament under which this summons was taken out.

Mr. Fulton said, if the defendants had, as the statute required, taken all reasonable precautions, they would escape the prohibitive penalties which it imposed. He would again point out that the Act was passed expressly for the protection of the watchmakers of this country; and also not only to protect the people who made the watches but those who purchased them in the belief that they were really what they were represented to be. Messrs. Kendal and Dent were charged with unlawfully selling, on the 16th January, to Mr. Moore, who was one of the persons connected with the Watchmakers' Trade Association, the watch which was the subject of the charge in the summons. The watch, which was sold for £3 15s., bore on the face of it the names of Messrs. Kendal and Dent. There was no other description upon it. The case, if he might use the expression, the portion which was not the life of it, was of Birmingham manufacture, and machine made. The life of the watch was all of foreign manufacture. These were inserted into the portion of the watch made at Birmingham, and which was in itself, to say the least, a bad trade description. People who purchased a watch from a firm like Messrs. Kendal and Dent did not think that they were only buying a Birmingham case, and that the movements, which constituted the life of the watch, which made it go, and constituted its value, were all made in a foreign country. It was, therefore, an infringement of that portion of section 7 of the Act which fully described the matter, and which said where on the watch case there was any work or mark which, by common repute, constituted a description of the country in which the watch was made. He failed, therefore, to see the force of his friend's contention, as to their ignorance or innocence in the matter.

Mr. Beard called

Mr. James Kendal, who deposed that he was a watchmaker, carrying on business at 160, Cheapside. He produced his stock book, and from this he saw that the watch in dispute and the subject of this inquiry was supplied to him in March, 1885; its number was 62,123.

Mr. Beard: From whom did you receive that watch?

Mr. Kendal: From the English Watch Company in Birmingham.

Mr. Beard: Who supplied it to you as an English-made watch?

Witness: Yes.

Mr. Beard: And I believe you have done business with that company for several years?

Witness: Yes.

Mr. Beard: As a matter of fact it was supplied to your firm as an English lever?

Witness: It was.

Mr. Beard: And had you any reason, Mr. Kendal, to suspect or believe that this watch was otherwise than represented to your firm, *i.e.*, that it was English made?

Witness: None whatever, sir.

Mr. Kendal, in answer to further questions from his solicitor, said that he gave a guarantee or warranty that under reasonable circumstances the watch would be "guaranteed" in time and order for a period of five years, breakages and other injuries, of course, excepted.

In a very rigid cross-examination to which the witness was subjected, he admitted that the claim his firm had to the title of "Kendal & Dent," was that a quondam co-proprietor in the concern was named John Dent Gildart, and the latter was no longer in business with him as a partner or in any way connected with the concern.

Mr. Frederick John Gardner, manager of the English Watch Company, at Birmingham, and Mr. Robert Bray, the secretary of the same, were called, the former admitting, and the latter stating that the company had been in the habit of importing materials and placing them in English cases. These materials were obtained from Switzerland, because they could not ensure "uniformity," and not because of the cost. Since the Merchandise Marks Act had been passed they had got "uniformity" in the home-made materials, and the Birmingham workmen were now doing the work.

In the result, after a long examination, the Alderman imposed on the defendants a fine of £20, and £5 costs.

Pawnbrokers and the Merchandise Marks Act.

THE two cases of prosecutions of watchmakers for infringements of the Merchandise Marks Act, one of which appears in our present issue, have made the pawnbrokers (in common with others in the trade) anxious to know how the Act will affect them as regards selling watches that have come into their possession before the statute came into operation. Believing that it may be of use to the trade, the *Pawnbrokers' Gazette* gives in answer to a correspondent the following opinion of Counsel *re* Pawnbrokers and the Act, which was prepared for the Metropolitan Pawnbrokers' Protection Society, and circulated amongst the Members with the Report for 1887.

"I am of opinion that the 'Merchandise Marks Act, 1887,' would include within its operation the dealings of pawnbrokers with their sale stocks, whether such stocks consist of unredeemed pledges, or of bought goods, or of both; but so far as regards any prosecutions for offences against the Act in respect of unredeemed pledges, the fact that a pawnbroker is, by force of his business, obliged to have in his possession for sale and to sell such pledges as to the history of which in many cases as regards the place or country in which they are manufactured or as regards their mode of manufacture, it would be well nigh impossible to have any accurate knowledge or information, would probably have considerable weight in favour of the innocence of the pawnbroker charged. But it seems to me that even the exercise of the greatest possible caution will not exempt pawnbrokers from the risk of being charged with committing offences against the Act, although a pawnbroker may (by adopting such measures as are hereafter alluded to) protect himself when selling any goods, yet when he simply exposes or has in his possession for sale any unredeemed pledges to which any forged trade mark, &c., or any false trade description is applied, he is guilty of an offence under the Act unless he proves that he has acted innocently. And I may say here that if a pawnbroker has in his possession for sale at the present time any goods at which the Act is aimed, although he may have had such goods in his stock for months before the Act was passed, he is liable to be prosecuted under the Act. Where watches of foreign make in English cases (the latter alone being stamped), and other goods to which a trade mark, or mark, or trade description is applied of the genuineness of which there is any doubt, are sold either across the counter or at auction, a statement in writing signed by or on behalf of the pawnbroker, should be given to the purchaser at the time of the sale, to the effect that the works of the watch are of foreign make or, as the case may be, that the trade mark, mark, or trade description is not warranted, and a printed form to meet either case might be kept and generally used in the trade for the purpose.

"Pawnbrokers should abstain from taking in pledge any goods to which they have any reason to believe that a forged trade mark, mark, or trade description has been applied, and if such goods were left upon their hands, pawnbrokers might find themselves subjected to the charges I have already discussed.

"The great difficulty, therefore, in which a pawnbroker is placed by the Act in regard to his sale stock arises from the use in the Act of the words 'exposes or has in his possession for sale,' since a pawnbroker upon the actual sale of an article may, by adopting the suggestion I have made above, show that he is acting innocently, and has no intention to defraud; but if charged in respect of goods merely exposed or in his possession for sale, he can only *say* that he is acting innocently and does not intend to deceive future purchasers.

"A further question, however, arises as to whether the Act does not affect the pledge stock as well as sale stock of a pawnbroker, since the words of Sec. 2 are: 'Every person who......... has in his possession for.........any purpose of trade any goods, &c.' Now a pawnbroker carries on a trade, and when he receives a pledge he may be said to have them in his possession for the purpose of trade. Although it is scarcely to be supposed that the Legislature intended to include the pledge stock of a pawnbroker within the scope of the Act, as it is clearly not within its mischief, the Act being intended to put a stop to these goods being traded in to the disadvantage of purchasers and others, and not to prevent persons pledging them for a temporary advance of money. Still a pledge stock would still be within the strict literal signification of the words, which were probably introduced to meet the cases of persons having in their possession samples of goods for the purpose of exchange, although I think that the Act would be constructed not to affect pledges; but the matter is by no means free from doubt."

The Approbation System.

THE Birmingham jewellery trade has been the victim, during the last two years, of various articles more or less vituperative, which have appeared in a local daily paper.

The articles are evidently penned by someone who has no practical acquaintance with the trade, and whose information seems to be chiefly drawn from police and county court reports. They have, however, all the weight of apparent authority, and are calculated to do much harm to the trade, by misleading the general public.

It is not possible, nor is it advisable, to answer these false charges seriatim. We take it that our trade is not worse than the majority of other trades, and, taken as a whole, we do not require the pen of an apologist to clear our character. We may take it as a fact that there are more honourable traders than dishonest amongst us.

We are, however, quite at liberty to examine our modes of business, to see wherein we have made mistakes in the past and wherein we may improve our position for the future. Let us, therefore, in this light, give a few moments' consideration to this much-maligned approbation system.

This mode of doing business naturally arranges itself into two classes, viz., "stock appros." and "customers' appros."

The former consists of large parcels of goods (usually an assorted selection of all that the manufacturer keeps in his own stock), which are carried round the country by the factor's traveller, as though they were his own properly invoiced stock. The parcels of goods are kept for lengths of time varying from three or four weeks to six, nine, or even twelve months; returns being made at the convenience of the holder, and the goods kept being invoiced as from date of return.

This style of doing business was the natural and easy outgrowth of a declining trade. Things in the country were quiet and factors would not buy. The manufacturer, fondly hoping that his goods have but to be shown to be sold, suggests sending in a small lot on sale or return, which the traveller should carry with his regular stock. The idea is readily taken up by the factor, he also trustful that increased business will accrue. So far the easy beginning. Doubtless for a time trade was forced and sales were made. But the depression grew worse rather than better, and the slight beginning indicated above soon became a great rush of stock appros. Factors demanded the accommodation, or rather they refused to buy, and manufacturers rushed in with mad infatuation, thinking that herein lay the grand remedy for bad trade.

And soon followed another and a disastrous result. Men without one penny of capital—travellers and clerks discharged to reduce expenses—thrown suddenly on their own resources, determined to try their luck by setting up for themselves (as they called it); getting every iota of their stock on approbation and travelling round the country reckless of everything so that they cleared their weekly wage.

Others, not merely reckless, but intentionally dishonest, speedily followed on their track, thus swelling the trade with a great number of men who were in no wise genuine tradesmen, but to whom, principally, the trade is indebted for the bad name which has gathered upon it. Glancing back over the last ten years, one can count dozens of such mushroom growths whose life lasted but a few months, and whose death happened with the crash of failure, bringing dishonour both to themselves and to the trade at large. These unfortunate events could not have occurred, but for the nefarious practice which enabled men of neither means, position, nor business ability to trade from the capital of others.

So much for the melancholy record of stock approbation. In no case whatever was it a success, for even where genuine business was done, the extra amount of stock necessary to keep, and the cost of cleaning, re-carding and re-papering entirely swallowed up any profit that might have accrued from the transactions.

It is, however, no use bewailing the mistakes of the past, nor is it fair that the general character of the trade should be now impugned for such. The system of which we are speaking has now (with few exceptions) passed away. It was in the nature of an experiment, and quite pardonable as an experiment. It was an honest endeavour to meet the difficulty of bad trade—to make the best of a quiet time; and the starters of it did not dream to what lengths it would go, or what unfortunate consequences would flow from it. It was an experiment which has proved to be a most disastrous failure; and as such it has been relinquished. The very manufacturers who were the first to introduce it have been the first to abandon it on finding out its tendency and results; and now, for a factor's traveller to carry a stock appro. parcel is as much the exception as a few years ago it was the rule.

Undoubtedly the Birmingham jewellery trade is now in a more healthy state than it has been for years. So many of its more shady followers—both makers and factors—have been weeded out, and those who are left are working on a more safe and reliable basis. The old system of factors buying periodically very large parcels, fraught with so much danger both to buyer and seller, has almost died out. Stock appros. and their attendant evils as already mentioned have vanished from amongst us, and a safer and more business-like system of buying small and well selected parcels as often as required, is fast becoming the rule. On this basis, and with a gradual improvement in general commerce, we may look forward to a spell of good trade and fair average prosperity, although perhaps the times of large and rapid fortunes may never return.

As to "ordinary" or "customers" appros., we have a different tale to tell. Their commencement dates back to a time far anterior to their ill-fated fellows, and their origin was of a different nature. They sprang into existence to supply a genuine want of the trade—to perform a definite use for the trade—and their growth and development have but followed the requirements of that use. A customer calls upon a shopkeeper and asks for a special article. The shopkeeper has not got one in stock, and therefore cannot supply. Here, in the ordinary course, the transaction would end, for the retailer could not possibly buy goods on the chance of supplying every special call upon him. But the approbation system comes to his help; he sends for the goods "on appro.," submits them to his customer, makes his sale, and returns those not kept as soon as the business is concluded. Thus we find that business, if not actually created, is saved from death by this means; and many a good sale is effected which would otherwise be lost.

This, as a typical instance, illustrates the use of the system, and its immense development emphasises the fact, that its use and its purpose, still exists. Nothing succeeds like success, and the ever increasing vitality of the appro. trade, proves beyond doubt its claim for usefulness. Were its operations antagonistic to the best interests of our trade, it would long ago have been abandoned. Had it been a false and corrupt system, it would have decayed away from its inherent uselessness.

Instead of this, it is constantly growing in extent and in usefulness. We can affirm this from a careful and practical comparison of the last nine years, during which time we have had experience with several of the largest manufacturers in Birmingham. Year by year the number of approbation orders, and the value of the "keeps" or sales effected through their agency has been constantly growing. Let us add also that the antagonism of the makers to the system has almost died out;

they recognise it as a useful agent in their business, and are giving it an increased attention.

It may be argued, and doubtless there is much truth in the argument, that what we gain by appro., we lose in the way of sales. That whereas formerly a factor or shopkeeper would buy his parcel from stock and himself take the risk of selling it, yet now his buyings are small, as he can get what he wants on appro. Granted; but is it not better to sell straight off a series of single articles that are actually taken by the public, than that factor and shopkeeper should buy large quantities of stock, which they cannot sell, and which is therefore equally beyond their power to pay for? Herein has been one of the great mistakes of the past—the tendency to overstock, to force sales, regardless of the chances that the public, upon whom the whole fabric of business necessarily rests, would not buy the goods. Trade effected through appros. is genuine, and therefore safe; and we must be prepared to accept and make the best of the change that is coming over our style of business. We may be well content to resign the large and risky transactions of the past, and take up the slower, but more numerous and surer lines as now obtaining.

It is not to be expected, however, that any such system will be perfect. Abuses will of necessity creep in (they have already crept in) and loss and annoyance will naturally follow in their train. It is very unpleasant, for instance, to receive calls for the same article from some half-dozen factors at once, and to know, in the first place, that the shopkeeper himself has applied to each of these for the goods, and secondly, that each of these factors has in his turn applied to three or four manufacturers. With the chance of selling only one article from all the stuff thus gathered together, there must ensue much disappointment. Again, to have your goods returned after three or four weeks, in a state that plainly tells that they have been worn during that time, is extremely exasperating. Or to know that the retailer only wants to make a good show in his window for some special occasion when he professes to have a sale on hand, is doubtless annoying. But these must be taken as incidental evils of any otherwise good system, and not as indicating that the whole mode is wrong and detrimental.

Of course, this style throws on the manufacturer the necessity of keeping a large stock; but then this stock is constantly being turned over, and is always having a fair chance of being sold, and we have no hesitation in re-affirming that much business is transacted, many sales are made, that without the appro. system would never be effected. Especially is this the case in diamond and other highly-priced goods.

There are, therefore, two questions that we have to consider. Firstly, Do we gain or lose in actual bulk of business under these late conditions as compared with the past? secondly, Is there any possibility of this appro. business being superseded by a better mode?

As to the first question, our opinion is sufficiently evident from what we have already said—that real business is facilitated and increased by this means. As to the second matter, it is impossible to prophesy as to what changes may occur, what altered conditions of trade may arise, and thence what fresh modes will have to be adopted to cope with new surroundings. It is sufficient for us to know that under existing circumstances the appro. trade serves a useful and a helpful purpose—that, to use an Americanism, it is "business," and as such it merits our careful attention. If its incidental abuses can be removed or lessened, so much the better; but with men of all shades of character to deal with, there are bound to be some who would take unfair advantages of any possible system, and the ill-use on the part of some does not prove the worthlessness of the whole.

Were it possible to at once abolish the approbation, it would be like a death-blow to the trade. The older conditions of work would not suit the present requirements. We look upon the approbation system as a development, not as a retrogression, and it is to our best interest to watch its growth and to cater for its requirements. *Verbum sap.*

MANUFACTURER.

Birmingham, *February*, 1889.

Hall-Marking from Sheffield's Standpoint.

Interview with THE SHEFFIELD SMELTING COMPANY.

REFERRING to a previous article on the subject of assaying and on the grievances of the local trade in their dealings with the Assay Office, I desired, says a special correspondent of *The Sheffield and Rotherham Independent*, to carry the matter further by an interview with a firm whose long experience and wide dealings with the silver trade throughout the country render of especial value their opinions on trade matters. I need hardly say that my eyes turned towards the Sheffield Smelting Company, who, as every practical man knows, occupies an almost unique position. They manufacture no silver themselves in the shape of finished goods—probably even the principals could only tell you from hearsay what is the price of silver spoons. Yet they are intimately associated with the silver trade in all its branches, have business relations with most of the large firms in Sheffield, and not a few in London and Birmingham. Their name as smelters and refiners is famous even beyond this country, and the quantity of bullion in various forms turned out from the factory, not far from Attercliffe-road Station, is very large. The business to-day is in the hands of Mr. H. J. Wilson, M.P., and Mr. Wycliffe Wilson, who are familiar figures in Sheffield life. They are great-grandsons of one Mr. John Read, who founded the silver refining business a century-and-a-quarter ago in Green-lane, Sheffield, since which time it has never been out of the family. With business relations such as these it was tolerably clear to me that the principal partners could tell a good deal if they chose, but the point was would they care to do so. I had heard a good deal of the jealous care with which factories are guarded where the actual process of refining and rescuing the precious metals from all kinds of scrap and "waste" is carried on, but fortunately I was told that an "open sesame" would be furnished for my benefit.

At what to me is an unearthly early hour in the morning—9.30 p.m. would have suited me better than twelve hours earlier—I am admitted within the charmed circle, and under the personal guidance of Mr. Wycliffe Wilson I make a tour not only of the firm's warehouse in Arundel-street, where a large stock of silver is kept in the multitudinous forms and sizes necessitated by the varied requirements of the silversmith, but of that portion of the Royds Mills where silver is refined, melted, alloyed to the "standard" fineness, cast into ingots, and assayed.

All the processes I witness are interesting to the novice. But not a few of them would require, to enable your readers to follow me, a long and extremely technical description, which I forbear to give, whilst others have but a comparatively remote bearing upon the subject now engaging the attention of the Sheffield trade. I follow the process indeed principally for the purpose of enabling me to appreciate the possible difficulties which may arise in the subsequent conversation, which is after all to be the principal matter. Only as to one department do I propose to describe what goes on in the factory, and this is the assaying. Assaying is carried on here on a very extensive scale, and with a degree of accuracy which not merely bears testimony to the care which has to be used in dealing with precious metals, but does much to explain the enviable reputation the Sheffield Smelting Company has obtained for supplying reliable articles to the trade. It seems to me as if there are scales and balances on every side for carefully weighing and preparing samples for assay, and it is evident that in the muffle furnaces the process of cupellation is carried on with a frequency which would startle the uninitiated. All this will be better appreciated when I explain that the preparation and sale of the silver for the Sheffield trade is only one section of the large business done by this firm in the precious metals. As the process known as cupellation—which is that adopted at the Assay Halls—has already been described, I only follow closely the humid process, differing as it does in every respect. My guide explains that by this process it is possible to determine to a much greater nicety the actual fineness of the silver, but it is necessary at the onset to know approximately what degree of fineness may be expected. This, however, is generally already known, and the company test by the humid method for the sake of accuracy. The assayer uses here for his "proof" silver which is known to assay 1,000 or within one or two *ten-thousandths* of that quality. He weighs carefully 1,000 millimes of this fine silver, which he puts into a clean stoppered bottle. He then weighs portions of the metals to be tested, putting into other bottles scrapings or cuttings, as the case may be, in such quantity as he believes will contain 1,000 millimes of silver. Thus, if he believes the silver will assay ·925, or 75 less than a 1,000, he will weigh out 1,075, or 75 more than 1,000, the 75 representing the alloyed copper or other metal. Nitric acid is poured into the bottles, and the dissolving of the silver is assisted by heat. When thoroughly dissolved a measured volume of a solution of salt in water is added; this solution being standardised so as to secure the precipitation of exactly 1,000 millimes of silver. The silver is precipitated as a white chloride—the copper alloy remaining in solution—and the bottles are shaken to facilitate the settling of the chloride. The white chloride lies on the bottom of the bottle, the clear liquid containing any unprecipitated silver: to test this a solution of salt of exactly one-tenth the strength of that first used, and one-hundredth of the quantity is added. Should there still be silver in the solution, a clear white band will be visible at the surface of the liquid in the bottle, and the shaking to precipitate is repeated so long as a band appears on each addition of the solution. Finally, a very faint band appears, which indicates that the operation is finished. From the quantiy of the dilute solution required the quality of the silver is calculated. The sample which was calculated as 926·8 comes out 929·3, and the one which was reckoned as 923 is 925, whilst the other is "worse," having been estimated at 965, while the assay gives it as 962·7 only.

After seeing fine silver in a molten state poured into a pan of water, from which it is taken in the form of small and beautiful looking granulated pieces, which are so easily weighed with the proper proportion of copper as alloy to form "standard," we journey back to the private office. Here Mr. Wycliffe Wilson intimates that he is prepared to reply to any of my questions as far as he can, though he frankly adds that, not having devoted much time to studying the various articles which have appeared in the local press recently, he can hardly speak with precision on some points, which seem more suitable now for free discussion than dogmatic opinion.

"As to the plate duty," I ask, "Do you object to the repeal?" "No," replied Mr. Wilson, "I must say that on the whole, apart from the drawback, I do not see how the repeal of the duty can fail to stimulate trade, though the prospect may have been somewhat exaggerated. This is my personal view, though I am bound to tell you that many manufacturers with whom I have talked, and for whose opinions I have the greatest respect, are strong supporters of the duty. To me, all taxes on trade are objectionable, but there does not seem any vital question of Free Trade involved here, because the plate duty is not a Protective duty in the ordinary sense of the term, but a duty which everyone pays, whether the silver is made in Sheffield, in India, or in Germany. There is also something in the plea that silver goods being a luxury the tax falls upon those well able to bear it."

"That is so," I reply, "but the grievance of the Indian silversmiths is as to the incidence of the tax. English silversmiths send their goods to be assayed in a partly finished condition, and are allowed a rebate of 3d. per ounce for loss in finishing. You will not need to be told that goods do not lose nearly one-sixth in the finishing after assay, but the Indians are compelled to assay after finishing, and to that extent at least there is a protection in favour of the English silversmith as against his Bombay rival. Trying to judge between the two statements I should think the Indian silversmith is handicapped by the system to about 1½d. or 2d. per ounce."

"Of course," replies Mr. Wilson, "I could not, as a Free Trader, defend that. The Indians ought to be put on an equality, and though the drawback is a serious question, it ought not to stand for ever in the way of the repeal of the duty. It seems to me that if the trade would meet and confer on the question, a method of dealing with the drawback could be arranged without any insuperable difficulty. Two ways suggest themselves—there may be others. One would be to allow drawback on the stocks held by the trade, the other would be to allow each silversmith a sum equivalent to the duty paid for a certain time. It is evident that whatever system is adopted some one will be put to inconvenience and loss. My belief is that this would be only temporary, and that the consequent development of trade would soon result in abundant compensation. If the duty is to go, the best thing for the trade is surely to try and come to terms."

"Then about Hall-marking?" "That," replies Mr. Wilson, "is a much more difficult question. There is, no doubt, a good deal to be said in favour of reform. But the manufacturers in Sheffield are so firmly attached to compulsory Hall-marking, and have given such excellent reasons why it should be maintained, that up to the present at least I am unable to accept Mr. Watherston's views. I don't see that compulsory Hall-marking is a violation of any important principle, but regard it as a question of policy in the interest alike of the public, who want to know that they have their money's worth, and of the honourable silversmith, who desires to give his customers an unbiassed guarantee of the quality of his goods."

"You would look rather to reform than to abolition then?" "Decidedly. I am not unaware of grievances, nor oblivious to the necessity of trying to do a foreign trade, but the point is whether, if the matter is faced fairly these grievances necessarily involve in their removal the abolition of the compulsory Hall-mark? Some of them, at least, do not touch that point. For example, take our local grievances. I certainly think that the Sheffield Hall ought to be open every day instead of only three days a week. A manufacturer sends goods on Friday to be assayed. Possibly these articles are part of a special order. If he gets them back the same day they can be finished and sent off that week. But if there is any mistake or doubt in the assaying they will be kept over, not till the next day, but until the Monday, and so a great inconvenience is caused. There have been cases of goods being tried and retried on two or three successive assay days, and marked as standard at last. Then again, though I have no wish to say a single word against any official personally, I think Sheffield manufacturers have a grievance in the fact that the Assay Office appears to expect goods to be *above* standard, and practically insists on the silver being better than ·925. You probably know that certain parts of the 'scrapings' are saved and sent up yearly by the different provincial Halls to to be assayed in London. I have heard utterance given to a surmise in reference, I think, to a former Assay Office Master in Sheffield, that he prided himself on his trial coming out the best in the country; and I believe several local manufacturers are of opinion that a quality that will readily pass the Goldsmiths' Hall would run a serious risk of being broken at the Sheffield Assay Office. The question of 'toleration' comes in here, and there is something to be said for the view expressed to you the other day by Mr. Turner. But, on the whole, I think any deviation from the hard and fast line would do more harm than good. The fact is, that all ordinary difficulties are overcome by the manufacturers aiming at ½-dwt. better than standard, and no amount of 'tolerance' would effectually overcome any real mistake in alloy."

"Do you not think," I ask, "that Indian silversmiths have a grievance here. They can make much more easily to the rupee standard than the British standard. Rupee silver is very little worse than ours—2 dwts. worse; 11 ozs. 0 dwts. instead of 11 ozs. 2 dwts. And yet our Government refuses to allow either the establishment of a Hall in India whose assay mark should be recognised here, or to allow silver of rupee fineness coming from India to be assayed at British Halls, and marked with a special and clearly distinct mark?"

"There is a good deal in that," replies Mr. Wilson, "and I can see their difficulty. It must be hard for Indian silversmiths manufacturing where there are no Halls to keep up their silver to a standard, a higher standard than the silver coinage of their own country; but I am not prepared off hand to suggest a remedy."

"Then, as to the compulsory Hall-mark itself?" "I cannot add much to what I have already said. It seems to me clear that the Hall-mark is so valuable to the purchaser as a guarantee of quality—giving him something which has always a real marketable value; and is likewise so useful to the manufacturer—placing each one on a perfect equality, that to make it voluntary would be a very doubtful policy. Of course, there is something in the plea that if people wanted the Hall-mark they would get it, and if they do not want it it ought not to be forced on them. But there is a reply to that. Dealers would try to force the sale of unmarked plate, telling their customers it was 'just as good,' and they had to pay so much for the mark, and then the door is open for fraud"—

"Because," I interpose, "not even an expert can tell the quality of silver by any rough and ready method?" "That is the case," replies Mr. Wilson. "A shopkeeper might tell his customer that the unmarked plate was ·925, or ·900, or ·800, or what not. It would be all the same, because no one could tell without an assay, especially if the goods were electro-plated, as they generally are. And the dealer could be deceived by the unscrupulous manufacturer just as easily as the dealer could mislead the public. The mark is a protection to the honest manufacturer, the dealer, and the public."

"What about our trade with foreign countries?" "Well, I admit that is a subject deserving of close attention. I do not at all understand why, if there is any demand for silver of our standard in Canada, we should be prevented from sending silver marked at the Hall '·925 sterling,' instead of with the lion. But I am told as to the continental countries that the heavy import duties levied would keep us out of the market, and not make it worth while to cater for them, especially considering the practical difficulties in the way of making several qualities of silver."

"Are those difficulties as real as some have asserted?"—"Well, see and judge for yourself," rejoins Mr. Wilson, and he conducts me to the safes, where are stored the partly manufactured articles the firm keep in stock for the convenience of the trade. Here is a card on which are no less than 170 different patterns of silver wire, round, square, half-round, oblong, and figured, and there 20 more patterns of beaded and fancy wire. In these partitions he tells me there are 30 different gauges of rolled sheets of silver, which are kept for cutting blanks, and here are what look like small ingots used for rolling into dessert and fish eaters. In an adjoining safe we see 30 sizes of "beads," round, fluted, and squat shaped, used for the feet of cruets and the junction of handles of jugs, &c. "Here," remarks Mr. Wilson, "you have an idea of the variety of patterns we have to keep for one standard—everything you see is ·925 silver, or rather ·927, for we aim at selling nothing below $\frac{1}{2}$-dwt. better. For some of them we have a large and steady demand, for others there is only a small sale, we keep them for the convenience of the trade. But if we made two or three qualities of silver we should have to stock all these patterns in each quality. Of course, *we* should do this if there was a sufficient demand to warrant it, but so far as my practical knowledge goes there is no method which would effectually prevent the danger of mixing in the process of manufacture. Any system of marking we adopted would be useless to the manufacturers, for any mark I can think of would be obliterated in the first process the silver passed through. I know you have written of the several standards in France and Germany, but do you know as a matter of fact whether or not these multiple standards are really used? For my part I should be prepared to hear that they originated through different qualities being made in different parts of the country. In Germany national feeling may have dictated the wisdom of retaining by law the several standards used in the different countries now constituting the Empire, but I should imagine that now what has happened is that one of them is practically adopted as the standard, and the others have fallen into comparative disuse. Our own Britannia standard affords an illustration of a mark allowed, but very little used."

"I am unable to speak definitely on the point," I reply. "But does not that cut both ways? If our manufacturers can do a trade with Russia in ·840 silver or with any other country which uses a different standard, why should the English law absolutely prohibit the trade even when no question of fraud is involved? If we had two or three standards sanctioned by law would it not operate something like it does now with the old Britannia standard? I go to-day to a silversmith in Sheffield, and ask for a teapot in Britannia standard, ·960 fine. He replies, 'I don't keep it, the demand is so small it is not worth while.' But if I was to give an order for a thousand ounces of Britannia silver, I fancy no one would refuse it, because it would be 'worth while.' Would not liberty to make for the foreign markets act in the same way? Those firms who found that it paid them to make the silver would make it. Those who did not would go on in the old sweet way."

Mr. Wilson replies that very likely this might be the case, and adds that all he is anxious for is that the compulsory Hall-mark should not be abolished without better evidence of the good likely to arise from such a course. As to the liberty to make other standards, he admits that the point ought to be threshed out. And so, as the dinner bell has already rung, I thank him for his courtesy, and a moment later am out in the pure air of Attercliffe Road.

Sheffield and the Plate Duties.

The following is the text of the memorial presented to the Chancellor of the Exchequer by the Sheffield silversmiths:—

"A memorial from the manufacturers of silver plate, carrying on business at Sheffield, in the county of York, most respectfully showeth, that the manufacture of silver-plate is an old and extensive Sheffield industry, and one which, notwithstanding the competition of electro-plate, is gradually increasing. Its dimensions cannot be judged by the Assay Office returns, because a very considerable proportion of the silver goods manufactured here is assayed in London, and some elsewhere, so going to swell the returns of other places, while little or none of that which is manufactured elsewhere is sent to Sheffield to be assayed.

"That it is the unanimous opinion of those present that the retention of compulsory assaying and Hall-marking is most strongly to be advocated, not only for the special interests of those engaged in the trade, but for the public benefit, because the Hall-mark, which in itself is obtained at little cost, establishes the quality of the bullion which forms the groundwork of silver-plate. Not only is the mark highly appreciated by the purchasing public, but its existence indicates a standard by which the value of the metal can easily be ascertained, and facilitates purchase and sale.

"That in much silver-plate the metal itself forms a large part of the entire cost, and with the Hall-mark that metal has a market value which only fluctuates with the rise or fall in the price of silver.

"That if the assay were rendered optional, it is our belief that while at first from habit the public might continue to demand Hall-marked goods, the keenness of competition among the producers and retailers, and the love of apparent bargains by the purchasers, would tend to the gradual introduction of material ever receding from the present standard, until a minimum of silver and a maximum of alloy was reached.

"That this is no fanciful assumption, as may be gathered from the kindred trade of electro-plate, where the absence of any recognised standard enables quality marks indicating excellence to be placed on wares of great inferiority, and the impossibility of detection by superficial examination leads to grave deceptions.

"That in case similar results should occur if equal facilities for deception were provided in the much more valuable articles of silver-plate, it is hardly too much to assume that silver-plate would come to be regarded with some degree of suspicion, and the consumption of silver restricted rather than increased a result much to be deplored in the present state of the production of that metal.

"That an optional Hall-mark, if accompanied by an appreciable diminution of the amount of silver offered for assay, would probably tend to a revision and increase of the rates chargeable at the various Assay Offices for marking, if they are to continue self-supporting, and not to be subsidised by the Government.

"That with regard to the Silver Duty itself opinions vary, for while a majority of those present incline to the belief that repeal would not stimulate the purchase of silver-plate, and that without the duty so strict a regard would not be paid to infringements of the law as at present; others hold that the duty being to some extent a tax on industry, restricts commerce, and its repeal would lead to increased demand. There are again amongst us those who believe that while the tax falls almost entirely on a class well able to bear it, and from which class no urgent demand for its repeal has arisen, yet if Her Majesty's Government deem it advisable to extinguish the duty it is a matter that more nearly concerns the consumer than the producer, whose interests are not so directly affected.

"That to one point, however, earnest consideration is most respectfully urged, in case the duty be repealed, and it is that of drawback. While the duty is levied, not on the cost of manufacturing processes, but on the metal which forms the base on which those processes are effected, yet the duty must be paid at a comparatively early stage of the manufacture, with the result that producers and retailers alike are involved in the necessity of keeping large stocks of duty-paid articles. They cannot, as in certain other trades, keep small samples in stock, bonding the bulk and only paying duty on such parts as are withdrawn for prompt consumption; so that unless an equitable return for stocks on hand be made, it is felt that a very grave injustice would be inflicted on a class of traders who have had to bear a tax from the imposition of which they could not escape.

"That an alternative to voluntary Hall-marking has been suggested in the establishment of two or more varying standards, chiefly for the purpose of enabling our country to import or export goods not conforming to our standards, which, though nominally two, are for practical purposes one only. It may be pointed out that the complaint which has been made as to the exclusion of foreign works of art in silver, beneath our standard, is exaggerated; for while at the most silver goods imported for sale but conform to the laws under which we work, the rule is relaxed when such goods are imported for private use and not for sale; they are not liable to assay.

"That the multiplication of standards would undoubtedly involve considerable addition to the work and the expenses at the Assay offices, and largely increase the liability of the manufacturers to present goods for assay that came not up to the required standard; for whereas now with one standard only, many hundreds, if not thousands, of different parts are required to be kept in stock in a single large manufactory, that number must be doubled, trebled, quadrupled, as the case might be, with varying standards, and each kept most carefully apart lest confusion might arise and penalties be incurred, by the mixing together of parts so similar that no mere examination by eye, nothing short of assaying each individual piece could again separate.

"That this difficulty does not present itself to the merchant or retailer, who only sells the finished goods, nor is too great stress laid upon it, lest the trade might be thought to consider their own interests before the public advantage, but it is not believed that the very problematic demand for varying standards abroad would outweigh the benefits of the compulsory Hall-marked standards now in use. That the Hall-mark is valued and appreciated may be deduced from the fact that at certain of the Assay Offices, notably that at Birmingham, immense quantities of light silver articles, in which the value of the metal plays only a secondary part, and which need not be assayed, are Hall-marked by reason of the extra assurance thereby given of their quality; nor should this be regarded as an argument in favour of the extension of the principle of voluntary assay to the larger articles of silver-plate, because in the latter it is the metal itself which supplies the chief factor in the cost, to which metal no value beyond its intrinsic worth can be attached, except by representing silver which is unmarked as being of higher standard than its quality justifies; and when, as is the case with some of the more important goods, large masses of one of the precious metals form the basis, we feel justified in deprecating a change which would open the door to fraud and shake public confidence, for the Hall-mark on silver to some extent is analogous to the Mint-mark on a sovereign.

"That, in conclusion, due consideration is solicited to the fact that for 500 years the principle of compulsory assay has been in operation as a safeguard for the public, and that in the opinion of your memorialists that safeguard is to-day as valuable as ever in times past; nor is there sufficient evidence of general desire for its discontinuance as to demand the removal thereof.

"And your memorialists will ever pray—

"Signed on behalf of a meeting including representatives from nearly every house engaged in the trade.

"Ebenezer Hall, Chairman."

The Duty on Silver and the Pawnbrokers.

AT a Special Committee Meeting of the Pawnbrokers' Protection Society, held on February 8, the questions of the Plate Duties and Hall-marking were discussed. It will be seen from the resolutions carried that the representatives of the pawnbroking interest are unanimously in favour of the retention of both the Plate Duties (in consideration of a prospective proposed inadequate drawback) and of compulsory Hall-marking.

Mr. George Attenborough said he supposed there was no one present who was not there at the last meeting. He need only ask them to carry their attention back to the opportunity he had taken of placing this subject before them, one which to his mind was entitled to the notice of the Committee. He had first of all to acknowledge the receipt of a most exact and useful letter from Mr. C. J. Thomson, giving information which might have been valuable, but he had obtained it from another source, probably from the same one as the writer of the letter, namely, from Mr. Molyneux, Secretary to the Inland Revenue, Somerset House, from whom, after spending some time in encountering the difficulties of red-tapeism surrounding the department, he had received a letter referring him to the Report of the Inland Revenue for 1888, which gave the number of persons who had obtained licences to be pawnbrokers and dealers in plate. The Board, however, could give him no information as to what proportion of the latter were pawnbrokers. The amount contributed by pawnbrokers to the Revenue was £35,720, which at £7 10s. each licence would give 4,764. The plate dealers contributed £47,919. He might tell them that although Mr. Molyneux had vouchsafed him a long and interesting conversation, he found no information was willingly given. The department preferred that inquirers should get it in some other way. He did not know the opinion of the Committee, but it was the second time the subject had been before them, having been adjourned from the last meeting for consideration that morning; but up to that moment the letter from Mr. Thomson was the only notice he had received that the subject occupied the minds of any member of the trade. He was accordingly forced to the conviction that he alone was alive to the disaster that the abolition of the duty would bring to pawnbrokers and silversmiths. He had made inquiries and he considered the loss would be a very serious one to them, and if they could by any joint action avert such loss the Committee would be discharging a most important duty in doing so. With that view he had drawn up a long resolution divided into three parts, which he would read to them. They were the outcome of his own opinion. If he had been pressed with correspondence complaining of the grievous loss the trade would suffer he might have been inclined to act in some other direction. The proposal to which the second clause referred was an absolute fact, and would almost exclude any member from being able to put in a claim for compensation. It was not sufficient for them to have bought goods of a dealer last year, though they were only one year old, and had never been engraved. If they were bought of a dealer, and not from the man who made them, they had no case. He was sure if each pawnbroker present were to ask himself what stock he had at the present time bought of the manufacturer during the last two years, the answer would be nothing at all. He was driven to the conviction that it was their best policy to join, as he had suggested, with the silversmiths in a general resistance to the measure. It was asked for only by a few dissatisfied persons in the silver trade, and had obtained the support of certain Members of Parliament who were always anxious to act in any matters proposing to take off taxes. He feared it would become law during the next session.

In answer to the Chairman, Mr. Attenborough said the price of silver would fall all round, owing to the tax being taken off, and they would have new silver being made and sold at 5s. per ounce.

The Treasurer asked how Mr. Attenborough had estimated the amount of silver held by pawnbrokers to be 30,000 ounces. He took it that it included both pledge and sale stocks, and would like to know if that view was correct.

Mr. Attenborough said he had a schedule prepared which divided the whole trade into nine classes. In class one, he had two members holding so many hundred ounces. In class two, 20 members holding so many ounces, and the others ranging from 25 members to 1,000 holding smaller quantities. From that he had arrived at a sum of £17,475. The figures were put very low indeed, he being very careful that a charge of exaggeration could not be made against him, and from the result thereby obtained, he had said before the Committee of the House of Lords that the loss to the trade would be about £20,000. Making the number of pawnbrokers 4,000, it left 400 who did not hold any plate at all. The amount included both pledge and and sale stock, he had no hesitation in saying. He also wanted the retention of the Hall-mark, so that they could tell where goods were manufactured, and not have American ware brought in and stamped here.

Mr. Wilson asked what the Committee referred to by Mr. Attenborough was appointed for.

The Chairman said there were two, one for the abolition of the duty and Hall-mark, and one in opposition to it. Mr. Attenborough had been before the one for keeping on the duty and Hall-mark.

Mr. Wilson said he himself in a little circle of the trade had heard very strong comments upon the matter, and had been asked what Committee Mr. Attenborough was associated with, and was he going to try to get the duty taken off. It looked as if he wished to act on a measure very detrimental to the trade, and hoped he was not forestalling them. The gentlemen he referred to would encourage a strong opposition to its being removed.

The Treasurer said if Mr. Attenborough would move his resolution, he would be glad to second it. His opinion was that abolishing the duty would be a step to abolishing the Hall-mark, which would be a great disaster to them. Those people who desired the abolition of the duty were only a small number, who wished to manufacture plate at 1s. 6d. or 2s. an ounce and flood the trade with it. As pawnbrokers, they ought to join anybody personally and with funds who were in opposition to the abolition, and also against interference with the Hall-mark.

Mr. Davison said there was the question of the Hall-mark and the question of duty on plate. Although there appeared to have been very little interest taken, they must bear in mind the promise of a full discussion that day. The question was introduced at a party of his friends, and very great interest was shown in it. The two questions were very different. There was the duty, which was nothing to do with the Hall-mark. It would be a most disastrous thing indeed if the latter were abolished, and as men of business they would oppose this shoulder to shoulder. It would be most dishonest to deprive a man of his stock and give him no compensation. If it was proposed to abolish the Hall-mark he should oppose it tooth and nail, and do all in that direction he personally could. He thought as a trade they ought to.

Mr. G. Attenborough said he should like to add that he was called before the Committee of manufacturing silversmiths, in order to give evidence on behalf of the pawnbrokers. He was first drawn into their presence under the following circumstances. Eight or nine years ago he prepared a paper for the purpose of giving evidence before the House of Lords. He then and there indicated that he was opposed to the abolition of the duty, and the Hall-mark. Some gentlemen present thanked him, and asked him to act in connection with their own Committee of silversmiths. He heard nothing more about it until two months ago, when he was asked to go before them again. He discovered their opinion had somewhat altered, and that they seemed to him to regard the removal of the duty as inevitable, and were diminishing their stocks in anticipation of the duty coming off all new silver. They regarded it as very disastrous, and intended to apply for a very large sum of money to which his £20,000 was a mere flea bite. They were willing to accept the co-operation of the pawnbrokers, and he was thus brought back to the position, that they could either join that Committee in a strenuous opposition, or act for themselves. There had not been the slightest suggestion made to him for money. He had been asked what amount of compensation pawnbrokers were likely to ask for, and had replied £20,000, being 1s 6d. per oz. on all silver supposed to be held by them, their loss arising from what he termed uncalled-for legislation.

Mr. Davison said he did not believe in asking the Government for compensation; they would not have a ghost of a chance in getting anything. He supposed their right in sueing for the balance of principal and interest on a forfeited pledge would be in no way disturbed.

Mr. Attenborough said such an action would not lie. They could not sue a customer, as the loss was not owing to his action.

The Solicitor said he was of opinion that they could recover as the action would be for money lent and interest thereon. That was nothing to do with what the money was lent on.

Mr. Hollington said there was a great deal in what Mr. Attenborough had stated that morning. He thought if the Hall-mark be done away with and the duty abolished, it would be a very great disaster to their trade. They ought to give the most strenuous opposition possible, as it would affect them in so many ways. They found Hall-marked goods sold much more readily than others. People took the Hall-mark as a guarantee of value. If an article bore the Hall-mark they were satisfied. If it were done away with it would raise any amount of fraud. They had only to look at the stuff now selling at 1s. per oz.

Mr. Attenborough said he did not know at all what would be the feeling of the Committee, but it would be of great assistance to him if, when he was called before the silversmiths' Committee, he could say he had the support of the resolutions passed by them, as the feelings of the trade which the Committee represented. He then read the resolutions he had drafted, which were passed as follows:—

Moved by Mr. Tyler, seconded by Mr. Russell and carried unanimously.

"That this Committee regard the threatened removal of the duty from all new silver plate as a measure involving a very serious and inevitable loss to pawnbrokers."

Proposed by the Hon. Sec., seconded by Mr. Wilson, and carried unanimously.

"The Committee learn with dismay that no compensation will be recoverable, except upon silver which has been obtained direct from the actual manufacturer within two years, and feel that under this limitation the pawnbrokers of the United Kingdom would fail in any attempt to prove for a loss commensurate with the depreciation in the value of their stocks."

Proposed by Mr. Sprunt, and seconded by Mr. Hollington, and carried unanimously.

"For these reasons, and looking at the fact that this Committee have no funds which could be diverted to this purpose, but which must be raised by other efforts, this Committee resolve to limit their action to a general opposition to the measure, and certainly would agitate for the retention of the Hall-mark."

The Treasurer then moved that Mr. George Attenborough "be requested to forward a copy of these resolutions to the gentlemen comprising the Committee for opposing the abolition of the duty, and that he attend to support them."

This having been seconded by the Hon. Sec., was also unanimously carried.

Practical Hints on Optics for Skilled Opticians.

(Continued from page 157.)

I assume, therefore, that insufficiency of the interni is a condition which has no real existence, that all unparalysed interni are strong enough to maintain convergence to fifteen inches and that the difficulty sometimes experienced depends either upon an excessive convergence demand, as in a myopia which brings the far point much nearer than fifteen inches, are all that will be required; and in the latter, taking the convergence distance as a fixed point, it is only necessary to vary the accommodation demand by lenses until the harmony between the two functions is restored. By this means we may, in many cases, relinquish the use of prismatic spectacles and may cure our patients by glasses which are everywhere procurable.

Dr. Hansen has pointed out that besides these cases of somewhat high degree of myopia we have apparent insufficiency in other conditions. In emmetropia, in hypermetropia, and in minor degrees of myopia, we find a few persons who preserve the parallelism of their eyes in testing equilibrium for distance, but in whom an excluded eye (as by Von Graefe's first test) becomes divergent at reading distance. If the divergence is small it means that the relative play of accommodation and convergence is large so that fusion being suspended convergence cannot be maintained unchanged by accommodation alone. If the divergence is large it means that the normal relation between accommodation and convergence does not exist; so that, although fusion produces convergence, accommodation without fusion cannot do so. In such cases the severance between accommodation and convergence is due to congenital or acquired central defect.

He describes yet another form in which there is the normal relation between accommodation and convergence, with absence of fusion. In these cases, which are also due to central defect, he describes as symptoms an exceedingly defective endurance, alternating with diplopia, as small divergence at reading distance and feeble adduction and abduction. Since I have been made acquainted with Dr. Hansen's views, I have been on the watch for one of these two kinds of central defect, but I have not at present clearly identified either of them. Dr. Hansen's description of them is exceedingly graphic and he speaks favourably of prismatic glasses as means of affording relief. Putting aside these instances of central defect, which are few in number, and which certainly require a more careful examination than they have yet received, our plan of dealing with a case of asthenopia should be in the first instance to determine and to correct any obvious ametropia or astigmatism, even if only of small degree. If the symptoms are still unrelieved we have next to consider whether accommodation and convergence stand in their normal relation to each other, and if not, how these relations may be favourably modified. Wherever there is sufficient range of accommodation the change should be made by altering the accommodation to meet an invariable convergence requirement—stronger convex or weaker concave lenses called for less accommodation; stronger concave or weaker convex lenses for more. Sometimes when the range of accommodation is very limited this simple plan must be laid aside, and the convergence must be modified to suit the accommodation. Prisms with their bases inwards diminish convergence; prisms with their bases outwards increase it.

When we employ prisms with their bases inwards to diminish convergence effort there is always some to weaken the interni by diminished use, and in such cases it is generally prudent to use also prisms with their bases outwards for a few minutes at a time, and at regular periods so as to strengthen the convergence muscles, as if by gymnastic exercise. A convenient measure of the strength of the interni, by which they can be tested at any time, is furnished by their power to overcome the artificial diplopia produced by prisms with their bases outwards when the eyes are directed to a moderately distant object.

In asthenopia of great severity or of long standing, even when we have corrected every discoverable ocular defect and have brought the accommodation effort and the convergence effort into harmony, we shall sometimes find that the use of the eyes is as painful or difficult as before. For a time this will be so in many cases and it is well to warn patients that their glasses will call upon their eyes to work under new conditions which, although better than those which they supersede, may yet be irksome so long as they are new. We must not therefore expect immediate relief as a rule; and it is best to insist upon diligent use of any prescribed glasses for at least a fortnight before we attempt to form a definite opinion about their probable efficacy. After the lapse of that time if the patient is still complaining and if we are sure that we have placed the ocular mechanism under the most favourable attainable conditions, we have next to develope the powers of this mechanism by carefully regulated exercise. We often have to deal with the effects of that most pernicious of all recommendations, the recommendation to "rest the eyes," and consequently with organs of which the whole nervo-muscular apparatus has been brought by disuse into a state at once of debility and excitability. Such conditions can only be relieved by careful strengthening of the weaker muscles; and for this purpose the employment of the eyes must be so regulated as not to impede nutrition by occasioning fatigue. The indications for the fulfilment of the required conditions were first clearly laid down by Dr. Ezra Dyer, of Pittsburgh, whose rules for this purpose have proved so useful and their value has been so thoroughly established by experience that in the U.S. the process is commonly called "Dyerising." Dr. Dyer first corrected any hypermetropia or astigmatism and generally prescribes such glasses as will place the eyes under the most favourable optical conditions. The remainder of his instructions I will give in his own words, which on this side of the Atlantic are not so well known as they deserve to be:

"The exercise of the muscles is best accomplished by reading. The patient is directed to select a book of good type but not too absorbing, and to read regularly with the prescribed glasses three times a day. He must determine by trial the number of minutes he can read without discomfort. 'He may find this to be thirty seconds, five minutes, ten minutes, or even more. He must, however, find this initial point. Starting at this point he must read regularly and always with the glasses. The first reading must not be until one half-hour after breakfast, the second at noon, the third finished before sundown. The periods of reading must be regularly increased from day to day. No other use of the eyes should be allowed.

"In cases where discomfort occurs in less than five minntes, the increase should not be more than one-half minute per day until ten minutes are reached. In other cases the patient may increase one minute each day, until he can read thirty minutes three times a day without pain; if this can only be done with pain the patient must be encouraged to persist, notwithstanding the pain; the surgeon, however, exercising his judgment in not pushing the treatment too rapidly. Should the pain continue from one period to the next it is evidence that he has gone beyond the maximum of his ability, and that he should fall back to a period at which he can read without discomfort, should regard that as a new point of departure and proceed as before. As said above, reading is the best exercise; but it frequently happens that the patient is very desirous to read or sew.

"This may be attempted when thirty minutes has been reached in the middle period. After the exercise has begun by reading ten minutes, sewing or writing may be tried for ten minutes, and the period finished by reading. From this point I permit an increase of ten minutes a day and a relative increase in the time of writing. This may be gradually introduced into the morning and evening period. I do not consider the treatment completed until an hour-and-a-half is reached.

"I have found it of great assistance to explain the rationale of the treatment to the patient. These cases rarely occurring except in the educated classes, they readily understand their nature and are anxious to assist the surgeon. I tell them that in reading, pure muscular action is required as much as in lifting a weight; that through want of use, debility or some derangement of the system, they have lost the power to exert the reading muscle without fatigue; that they can strengthen this muscle and increase its power of endurance by regular, constant and systematic exercise as well as with any other muscle in the body.

"The course of treatment serves to distract the mind of the patient and restores his confidence in his ability to use his eyes. He has become discouraged; he has had the horror of blindness carefully instilled by friends, and sometimes by well meaning physicians who, not feeling quite sure of their ground, err on the safe side and prescribe entire rest. In these cases 'the safe side' is the wrong side. When the glasses are procured and the patient is assured that there is no absolute disease of the eye as revealed by the ophthalmoscope, he commences his course of treatment with hope and zeal. The mere fact that he is told that he *must* use his eyes, gives him, to a certain extent, the power to do so."

Dr. Dyer, elsewhere, lays great stress upon the importance of restraining impatience when improvement is beginning to be declared. The patient who finds that he can read for ten minutes without distress is very likely to go on for twenty minutes, or until pain warns him to stop, but to do this is to invite relapse. With an increase of only one minute a day the duration of the treatment would be about three months, and it is better to submit quietly to this period of modified use and of self-restraint than to lose time at the beginning by fruitless endeavours to hasten a process which depends essentially upon the gradual improvement of muscular nutrition.

In many obstinate cases of asthenopia we shall find some derangement of the health or some need for better regulation of the regimen and habits. Under such circumstances the ophthalmic surgeon, if he should be so unfortunate as to be in the narrow sense a specialist, must call to his aid the advice of the general physician, and must not expect to render unnecessary, by the employment of spectacles, all the other resources of the healing art. When debility of the ciliary muscles and of the interni is a consequence of debility of a more general character, the condition of the eyes may, indeed, often be greatly improved by treatment specially directed to them; but complete functional restoration is hardly to be hoped for except in conjunction with a corresponding degree of improvement in the state of the organism as a whole.

The School of Optics re-opened January 15th. Those desiring a place in this class should apply early. For further particulars apply for catalogue. It will soon be found impossible to retain in any city an optical trade unless it is protected by some one who has a thoroughly practical knowledge of optics.

American Items.

American Patents.—The Supreme Court of the United States, in February last, rendered an important decision regarding American patents. By statute of the United States it is provided that when a patent is taken out in a foreign country and one subsequently is also secured in the United States, the patent shall expire in the latter country with the expiration of the patent in the foreign country in which it first runs out. Under the Canadian law patents are issued for five years, with the privilege of renewal for two periods of five years each. The question in this case was whether the lifetime of the American patent expired five years from its issuance in Canada, or at the end of fifteen years, which is the limit to which the life of a patent may be extended in Canada. The Supreme Court held that the patent in the United States does not expire for fifteen years from the granting of the patent; that is to say that the lifetime of an American patent first taken out in a foreign country does not expire until the extreme limit of time for which an extension of patent may be secured in the foreign country.

Death of Joseph Robinson.—The Toronto *Trader* says:—"By the death of Joseph Robinson, the retail jewellery trade of Canada loses one of its oldest landmarks. The deceased gentleman was born at Sheffield, England, in the year 1818, and after serving a long and thorough apprenticeship to the jewellery trade, finally decided to emigrate to some country which would afford more scope for his energies. The year 1842 found him in St. Johns, N. B., where he started the old Sheffield house, and after a number of years of successful business in that city he removed to Toronto in 1858. At that date, although the "Queen City of the West" was a growing place, it gave but little indication of the era of prosperity which the energy and acumen of its leading business men were laying the foundation for. Here, however, Mr. Robinson decided to locate and at once opened out a business in Watches, Jewellery, Clocks, Plated Ware, and Cutlery, under the well-known name of the "Sheffield House," a name that has ever since stood in this city as a synonym for honest and reliable dealing. This, his last venture, was highly successful, and Mr. Robinson, after amassing a considerable fortune, retired from it in 1885 in favour of his sons. Although diligent in business, the deceased gentleman found ample time to devote to outside affairs. For over a quarter of a century he was identified with the Sunday School work of the Zion and Bond St. Congregational Churches, and during part of which he performed the arduous duties of superintendent. In finance and matters of general business his opinion carried much weight amongst those who knew him, and for twenty-two years he was a Director of the Canada Permanent Building and Loan Society. Mr. Robinson, whose health had been failing for some years past, died on the 7th of February, and was buried from the residence of his son, Mr. Charles Robinson, at 133, Isabella Street in this city. He leaves a widow and four married children; Charles E. Robinson, manager of the "Sheffield House Importing Co.," Thos. A. Robinson, Mrs. C. W. Lee, and Mrs. John Massey. Mr. Robinson belonged to the old-fashioned school of business men, now almost too rare amongst us, who esteeming a good name as better than riches, preferred to lose business rather than stoop to methods that might be considered in any way questionable. His word stood high, and was at all times considered a sufficient guarantee for the quality of the goods to be sold. By his death, Toronto loses one of her oldest jewellers and most respected citizens, but he leaves behind him as a legacy to his family the record of a good life well spent and a name that they need never be ashamed of. *Requiescat in pace.*

Continental Items.

New Museum at Naples.—The well-known art collector, the Prince di Sitriano, has presented to the city of Naples the whole of his famous collections of arms, carved *objets d'art*, porcelain, miniatures, tapestry, &c. The collections, together with a fine library, are located in the Palazzo Como, and are open twice a week to the public.

Cologne Exhibition.—An International Domestic Exhibition is to be opened in the ancient and (as regards "scents") much maligned city of Cologne next month. It is to remain open until October, and as it will thus synchronise with the Paris Exhibition, many of the foreign visitors to that centre will doubtless be attracted to it. The interests of British exhibitors will be in the hands of Mr. Lee Bapty, of Manchester and Brussels (Exhibitions) repute.

Chimes.—Mr. J. H. Addicks, of Amsterdam, Holland, is setting up a chime of bells in a church in Stockholm, to be played in January next. The pin roller is connected with the steeple clock, and has besides this a key board and pedal, by means of which the 35 bells of the chime can be played like an organ. A first trial with only 24 bells, made only a short time ago, was very satisfactory. The clock work will play alternately, every half hour, Martin Luther's "A Fortress Firm is our God," and the doxology. The chime embraces 3½ octaves, and is a present to the city by a merchant and his wife, Mr and Mrs. W. H. Kempe. The bells weigh 5,986 kilograms, and together with mechanism, freight, erection, etc., the chime will cost 37,000 kronen (1,000 kronen = 268 dollars).

Mons. A. H. Rodanet has been nominated by the French Minister of Commerce and Industry, member of the Committee of Organisation of the International Congress for the Unification of the Hour. He has also had the Order of Leopold of Belgium conferred upon him.

Pierret Prize.—The Syndical Chamber of Horology of Paris notify intending competitors for this prize that the essays should be addressed to Mons. A. H. Rodanet, President of the Chamber, at 36, rue Vivienne, Paris, before May 31. The prize is 500 francs for the best essay upon the proper form of balance spring for obtaining isochronism in the movement of the balance. Each essay should be accompanied by a sealed envelope bearing a motto or sign and containing the name of the candidate. The prize will be awarded by the Syndical Chamber of Horology, upon the recommendation of a special jury composed of two men of science and three watchmakers.

The distribution of awards to the pupils of the Paris School of Horology, and to the prize winners of the annual competitions will take place on Sunday, July 7, in the great hall of Fêtes of the Trocadero Palace.

Royal Observatory, Greenwich.

ANNUAL TRIAL OF DECK WATCHES,

Nov. 24, 1888 to Feb. 16, 1889.

Order.	Name.	No.	Diff'nce between greatest & least weekly rates. Dial up. (a)	Greatest diff'ence between one wk. and the next. Dial up. (b)	Difference of weekly rates			Trial No.
					Pendant up. — Dial up. (c)	Pendant r. — Dial up. (d)	Pendant l. — Dial up. (e)	$a+2b+\frac{1}{2}$ $c+\frac{d+e}{3}$
			s.	s.	s.	s.	s.	
1	Isaac	10811	19·9	10·3	— 12·7	— 20·5	— 41·8	57·3
2	Usher and Cole	25314	14·6	14·6	+ 22·3	+ 2·9	— 11·1	57·5
3	Isaac	10814	22·8	7·3	— 14·1	— 33·0	— 52·2	58·7
4	Buckney	30403	23·0	16·3	+ 16·9	+ 6·3	+ 3·3	65·7
5	Buckuey	30401	17·6	17·6	+ 12·5	+ 39·8	+ 5 2	66·6
6	Brockbank and Co.	214	22·1	17·9	+ 15·4	+ 21·2	+ 1·4	69·4
7	Klean and Co.	62110	20·6	13·2	— 28·1	+ 44·7	— 20·8	72·0
8	Isaac	10820	34·1	9·2	+ 12·4	+ 62·0	+ 24·9	73·2
9	Buckney	30199	21·9	21·9	— 4·2	+ 25·2	— 32·2	77·4
10	J. Poole and Co.	5605	32·0	11·7	— 33·7	— 18·3	— 33·5	80·9
11	Hall	3003	31·9	17·0	+ 21·5	+ 18·3	+ 17·5	82·6
12	Usher and Cole	25261	26·3	24·3	— 13·0	— 2·8	— 24·3	85 9
13	Buckuey	30200	23·9	17·7	+ 28·2	+ 28·2	+ 48·2	86·1
14	Buckuey	30398	29·1	16·9	+ 18·3	+ 59·8	+ 25·3	86·3
15	Ashley	3757	33·5	25·3	— 1·6	— 11·2	— 12·4	88·8
16	Ashley	3621	29·9	28·0	+ 3·7	— 3·8	— 4·2	89·1
17	Kendal and Dent	24175	44·7	22·5	+ 16·8	— 8·3	— 7·8	100·8
18	Isaac	10795	29·2	26·4	+ 10·6	+ 48·9	— 36·7	101·6
19	Player	25451	39·1	26·3	+ 9·4	— 14·1	+ 25·4	103·0
20	Brockbank and Co.	213	60·5	11·7	+ 16·7	+ 31·2	+ 36·5	103·6
21	Buckney	30202	33·3	27·9	— 20·4	+ 30·5	— 49·0	111·7
22	J. Poole and Co	6424	34·6	34·6	— 6·6	+ 13·9	— 19·9	112·7
23	Buckney	30402	44·8	34·0	— 13·7	+ 33·7	+ 17·9	128·3
24	Klean and Co.	62111	38·8	35·7	+ 20·5	+ 48·6	+ 1·2	128·8
25	Kendal and Deut	25450	39 6	27·6	+ 22·1	+ 132·2	+ 52·6	136·7
26	Brockbauk and Co.	74212	65·2	36·7	— 8·5	— 3·1	+ 10·6	145·2
27	Player	25454	56·0	15·0	— 116·5	+ 48·2	— 8·0	153·6
28	Hall	3071	48·5	43·5	— 23·2	+ 9·3	— 56·6	158·1
29	Player	25452	65·4	33·9	— 38·7	+ 73·7	— 74·0	177·2
30	Buckney and Co.	30400	51·9	51 9	+ 17·6	+ 29·1	+ 71·8	181·3
31	J. Poole and Co.	6456	117·2	85·0	+ 27·6	+ 121·2	+ 14·1	303·6
32	Hall	3651	135·4	117·4	+ 1·6	+ 7·2	— 18·3	375·3

+ Denotes gaining. — Denotes losing.

The quantities a, b, c, d, e, in the formula, $a+2b+\frac{1}{2}\left(c+\frac{d+e}{3}\right)$ are taken numerically, without regard to sign. The Trial was for a period of twelve weeks.

W. H. M. CHRISTIE.

Royal Observatory, Greenwich,
March 19, 1889.

Applications for Letters Patent.

The following List of Patents has been compiled especially for *The Watchmaker, Jeweller and Silversmith*, by Messrs. W. P. Thompson & Boult, Patent Agents, of 323, High Holborn, London, W.C.; Newcastle Chambers, Angel Row, Nottingham; and 6, Lord Street, Liverpool.

2,955. A. Amaron, London, for "An Improved Watch." Dated February 19, 1889.

3,247. F. T. Tyndall, Birmingham, for "An Improved Clock for timing shorthand writers." Dated February 23, 1889.

3,323. Wm. Gardner, Rochdale, for "Improvements in Watches." Dated February 25, 1889.

3,559. J. Rowlatt, Leicester, for "An Improved Action for fastening studs, solitaires, necklets, and the like." Dated February 28, 1889.

3,671. A. J. Boult (a communication from R. J. Pouchard, France), for "Improvements in or relating to winding or synchronising clocks by electricity." Dated March 1, 1889.

3,865. J. Kendal, M. Laval and T. G. Cornwell, London, for "Safety Brooch Fastener." Dated March 5, 1889.

3,880. F. G. Faxon, London, for "Improvements in watch bows and pendants." (Complete specification.) Dated March 5, 1889.

4,026. A. Kulicska and. N. von Gébay, London, for "Improvements in keyless watches and other timepieces, for the prevention of overwinding." (Complete specification.) Dated March 7, 1889.

4,090. C. Hind and C. W. Stevens, for "Improvements in swivels and other similar articles for attachment to watch chains, for the prevention of loss of watch by theft or otherwise." Dated March 8, 1889.

4,198. W. D. Ramsay and C. Walker, Westminster, for "Improvements in advertising clocks, and other apparatus used for advertising purposes." Dated March 9, 1889.

4,371. G. Hookham, Birmingham, for "Improvements in electricity meters, parts of said improvements being applicable to electrical clocks and other electrical instruments." Dated March 13, 1889.

4,426. Henry Cherry, Birmingham, for "An improved collar stud." Dated March 14, 1889.

4,588. S. Naylor, Halifax, for "A portable electric alarm clock." Dated March 16, 1889.

Gazette.

Partnerships Dissolved.

Hawgood and Ladwith, Dulwich Road, Herne Hill, pawnbrokers. A. Wehrle and Sons, Cambridge, watchmakers. Chase and Gurdon, York Road, Battersea, pawnbrokers. J. and C. Coulden, St. John's Street, Clerkenwell, manufacturing jewellers.

THE BANKRUPTCY ACT, 1883.

Receiving Orders.

To surrender in London.—Tuck, Jno., St. James's Street, Clerkenwell, jeweller.

To surrender in the Country.—Bishton, Alfred (trading as Bishton and Fletcher), Birmingham, manufacturing jeweller. Woodroofe, Richard (trading as R. Woodroofe and Sons), Liverpool, watchmaker. Tumpowsky, Judah Isaac, Cardiff, jeweller. Lisenden, Robert Richard, Chorlton-cum-Hardy, jewellers' salesmen. Tannenberg and Sons, Leeds and Newcastle-on-Tyne, jewellers. Winter, A. G. T., Southampton, pawnbroker. Allsop, T. S., Middlesborough, watchmaker. Joseph, M., Cardiff, wholesale jeweller.

Public Examinations.

In the Country.—A. Bishton, Birmingham, jeweller, April 3, at 2. M. Joseph, Cardiff, jeweller, April 9, at 10.30. N. Tannenberg and M. Tannenberg (trading as Tannenberg and Sons), Leeds and Newcastle-on-Tyne, jewellers, April 2, at 11. G. Moulton, Birmingham, thimble manufacturer, April 17, at 2. A. G. T. Winter, Southampton, pawnbroker, April 4, at 12.

Adjudications.

In the Country.—Lisenden, R. R., Chorlton-cum-Hardy, jewellers' salesman. Monks, T. H., Wigan, pawnbroker. R. Woodroofe, Liverpool, watchmaker. Tannenberg and Sons, Leeds, jewellers. J. Brindley, Upper Easton, Gloucestershire, horn comb manufacturer. T. S. Allsop, Middlesboro', watchmaker. M. Joseph, Cardiff, jeweller.

Notices of Dividends.

In London.—A. A. Aldis (deceased), Liverpool Street, City, jeweller, 2s. 4d., second and final, any day (except Saturday), Chief Official Receiver, 33, Carey Street. C. Medlock (trading as C. Medlock and Son), New Street, Dorset Square, watchmaker, 8¾d., supplemental, any day (except Saturday), Chief Official Receiver, 33, Carey Street. W. P. Pugh and E. Pugh (trading as Pugh Brothers), Queen Victoria Street and elsewhere, heraldic engravers, 10½d., first and final, Chief Official Receiver, 33, Carey Street.

In the Country.—Sarah Ann Heap, Burnley, watchmaker, 9d., first and final, 7, Byram Arcade, Huddersfield. W. H. Icke, Chester, dealer in works of art, 1s. 9½d., first and final, Bankruptcy Office, Chester. A. C. Primavesi, Reading, watchmaker, 4s., first and final, Wholesale Traders' Association, Birmingham.

The Deeds of Arrangement Act, 1887.

Derby.

Glauert, Edward, 4, The Grove and Fern Mount, Buxton, watchmaker and jeweller. Trustee, Albert R. Lancaster, C.A., 77, Colmore Row, Birmingham, with a Committee of Inspection. Unsecured Liabilities,

£2,293 6s. 10d. Estimated Net Assets, £630. Creditors fully secured, £20. Deed of Composition dated March 5, 1889 ; filed March 12, 1889.

OXFORD.

Thatcher, E., and Son, jewellers, 1A, Corn Market Street, formerly of 51, Corn Market Street, Oxford. Partners, Elizabeth Thatcher (widow), and George Thatcher (trading as). Trustee, A. R. Lancaster, C.A., 77, Colmore Row, Birmingham. Unsecured Liabilities, £710 9s. 5d. Estimated Net Assets. £124 16s. 0d. Creditors fully secured, £35 4s. 0d. Deed of Composition dated March 6, 1889 ; filed March 9, 1889.

Recent American Patents.

Advertising Clock. A. V. Strait	397,148
Bracelet. C. K. Colby and W. Coppersmith	397,833
Button. J. McNerney	397,508
Button. D. P. Fitzgerald	397,350
Combined Fork and Spoon. D. P. Kisner	398,264
Cuff Fastener. H. C. Frank	397,119
Cuff or Collar Button. G. S. Tiffany	398,096
Earring. L. King	397,433
Earring. L. F. Brooks.	398,126
Earring or other Jewellery. A. Luthy	398,787
Jewellery. E. Schill and A. Becker	398,657
Latch for Match Flasks. M. B. Springer	397,399
Machine for forming Interlocking Eyes. R. Faries	397,175
Mainspring for Watches. E. Karthaus	397,504
Method of inserting main-springs and removing the same. E. Karthaus	397,505
Method of Demagnetising Watches. J. Greaves	397,423
Micrometer Gauge. C. H. Russom	397,442
Musical Box. F. E. P. Ehrlich	398,241
Optician's Measuring Instrument. E. B. Meyrowitz and C. E. Dressler	397,744
Scarf Holder. G. B. Adams	397,955
Setting for Jewellery. L. King	397,434
Spoon Rest. H. H. Abbe	397,885
Stem-winding and Setting Watch. H. Schütz	397,313
Temporary Case for Mainspring. J. W. Riglander	397,566
Watch Case Shaping Machine. H. L. Haldy.	398,251
Watch Movement Box. C. T. Graham.	397,853
Watchmakers' Tool. F. Leach	397,191

A printed copy of the specifications and drawing of any patent in the American list, also of any American patent issued since 1866, will be furnished from this office for 2s. 6d. In ordering, please state the number and date of the patent required, and remit to J. Truslove, Office of *The Watchmaker, Jeweller and Silversmith*, 7, St. Paul's Churchyard, E.C.

Correspondence.

All Letters for Publication to be addressed to the Editor *of* The Watchmaker, Jeweller and Silversmith, *7, St. Paul's Churchyard, E.C.*

All communications must bear the name and address of the sender, not necessarily for publication, but as a guarantee of good faith.

To the Editor of *The Watchmaker, Jeweller and Silversmith.*

Sir,—I have in my possession an antique, double-case, silver verge watch, and am desirous of ascertaining about what date it was made. Can you kindly give me any information on the subject ?

The watch has only the minute hand ; the figures of the different hours are painted on the top-half of the dial, and are arranged from six to six, and the top-half of centre of dial is cut away, a disc being fastened on hour wheel having a representation of the sun and moon on it exactly opposite each other, so that during the day the sun is pointing to the hours, and the moon at night. The maker's name on the dial is *Martin, Guildhall*, and the only marks on cases, "*R.B.*" The person that sold it said it was supposed to be about 200 years old—of course only conjecture.

Yours truly,
W. H.

18, George Street, Lovells, Birmingham.

[Mr. H. C. Overall (Clerk to the Worshipful Company of Clockmakers) has very kindly given us the following particulars in reply to our enquiry on behalf of our correspondent. As the minute hand was invented and applied to a watch by Daniel Quare in 1687, it is possible that the watch is quite the age ascribed to it by the vendor.—Ed.]

CLOCKMAKERS' COMPANY.

Dear Sir,—It is difficult to reply to enclosed. I send you a list of *all* the Martins we have had up to 1800. There is no Christian name, therefore it is impossible to identify him. Moreover there are hundreds of Guildhalls in the kingdom and I never heard of a watchmaker giving an address at Guildhall, London. Has the party misread it ; is it Martin, Guild*ford ?*

H. C. OVERALL.

Town Clerk's Office, Guildhall, E.C.,
March 6, 1889.

1679, John Martin, Whitegate Alley ; 1682, Abraham Martin (an engraver) ; 1687, Jeremiah Martin, Apprentice to Tompson & Dent ; 1751, William Martin ; 1771, Thomas Martin ; 1795, Edmund Martin.

TRIALS OF CHRONOMETERS & DECK WATCHES AT THE ROYAL OBSERVATORY IN 1889.

Sir,—I should be obliged if you would insert, in the next issue of your paper, the accompanying particulars respecting the trials of Chronometers and Deck Watches to be held at the Royal Observatory, Greenwich, in 1889.

I am, Sir, Your obedient Servant,
W. H. M. CHRISTIE, *Astronomer Royal.*

Royal Observatory, Greenwich, London, S.E.,
March 5, 1889.

CHRONOMETERS.

The annual trial of Chronometers at the Royal Observatory, Greenwich, will commence this year on July 6, and will be for a period of 29 weeks. The Chronometers will be tested in the oven for two periods of four weeks each, at temperatures ranging from 80° to 100° Fahrenheit, and also at the ordinary summer and winter temperatures of the room.

Application for permission to send Chronometers for trial must be made to the Hydrographer of the Navy, Admiralty, S.W., not later than Monday, June 17, and no Chronometer can be received at the Royal Observatory later than Monday, July 1.

DECK WATCHES.

Chronometer Makers who may desire to send watches to this trial must first obtain permission from the Hydrographer, Admiralty, Whitehall, S.W., to whom all requests for such permission must be sent not later than October 7.

The Watches are to be deposited here between the hours of 10 and 1 on any day (excepting Sunday), during the week ending with Monday, October 21, after which date no Watch can under any circumstances be received.

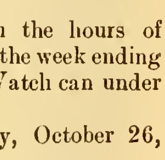
The rating this year commences on Saturday, October 26, and will be as follows :—

Watch Horizontal, dial up, in room for 6 weeks.
,, ,, ,, in oven ,, 1 week.
,, Vertical, pendant up, in oven for 4 days.
,, ,, ,, right, ,, 3 ,,
,, ,, ,, left, ,, 3 ,,
,, ,, ,, up, ,, 4 ,,
,, Horizontal, dial up, ,, 1 week.
,, ,, ,, up, in room for 6 weeks.

The mean temperature in the oven will be from 80° to 85° Fahrenheit.

The Watches are to be in silver cases, with crystal glass, and each must bear a distinguishing No. engraved on the plate of the movement. Preference will be given to keyless watches.

Each watch is to be labelled with its price, which is to include a mahogany box with ivory label, cleaning after trial, and engraving the Government mark on the dial and plate of the movement, and the name of the maker, the No. of the Watch, the letters D. W., and the Government mark on the ivory label of the box, as in the annexed form :—



The Watchmaker, Jeweller & Silversmith.

Edited by D. GLASGOW, Jun.

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The Watchmaker, Jeweller and Silversmith.

A Monthly Journal devoted to the interests of Watchmakers, Jewellers, Silversmiths, Opticians and kindred traders.

Correspondence.—Correspondence is invited on all matters of interest to the trade. Correspondents will please give their full address in each communication, not necessarily for publication, but as a guarantee of good faith.

Subscription.—A copy of the Journal will be sent monthly for one year, post free, to any address in the United Kingdom or countries in the Postal Union for 5s. payable in advance.

Advertisements.—The rates for advertising will be sent on application. The Watchmaker, Jeweller and Silversmith will be found an exceptional medium for advertising. Special Notices, Situations, &c., per insertion, 1s. for two lines, prepaid.

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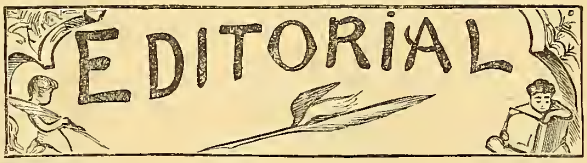


EDITORIAL

"HOW'S business?" is not only a question easier asked than answered, but is also one that is being perhaps more frequently propounded just now than any other.

It is not at all easy to get at the condition of our trades when they are anywhere near a normal state, the numberless crafts which they embrace and comprise rendering a just estimate extremely difficult, and it is only when there is a big "boom" in the trade or during a period of severe depression that we can safely say business is good, or the reverse.

Although statistics are perhaps still more misleading as to the fancy trades than they are in respect to any others, it is on them we must rely after all in order to obtain a notion of how we are going on. But it is to indirect statistics that we must look for this; and, as the prosperity of the fancy trades is dependent on the general trade of the country, it is satisfactory to note from the aforesaid statistics that there is not any immediate cause for alarm.

We have always our Crokers among us; and if these are to be taken any notice of, watchmakers, jewellers, and silversmiths are all "going to pot." This class is mostly to be found among the small fry, who, working "after the manner of our ancestors," are "busy" when they have anything to do, and "slack" when they have not. As far as our own observation goes, all the leading branches of the kindred trades are, considering all things, in a fairly satisfactory condition, and were we to venture on the dangerous ground of prophecy we would say that the present year will show at its close a better trade having been done than many of its immediate predecessors.

With the revival of fashionable taste for articles of "bigotry and virtue," as "Mrs. Partington" would put it, it is satisfactory to note the increased space that is daily, almost, devoted to the subject of jewellery fashions by those organs of the public press which are, or should be, authorities on what should be worn by fashion's devotees in other matters. The lead thus taken, and the publicity accorded to the productions of the jeweller's art, cannot (if the inspired ones are properly directed) but have a beneficial effect on the trade, and we welcome most cordially the signs of the times, of which the aforesaid are possibly the outcome, and which should mark an era in the history of the trade.

There is no accounting for public predilections (we might say "vagaries") in these matters, at all events among the upper circles. At one time diamonds are the rage, while at another coloured gems or pearls are the correct vogue, and then all at once, owing perhaps to the gospel of some so-called æsthete, we are surprised to wake up one morning to the fact that it is bad taste to wear jewellery of any kind or description whatever.

We say "If the inspired ones are properly directed" advisedly; for it is just possible that the writers of the fashion's articles referred to are inspired by what is being affected by the classes for whom they are catering, and, as we have before pointed out, it is the jewellers who should educate the public taste in these matters; not the public that of the jewellers. It is to the interest of both manufacturers and retailers that new jewellery should be in request, instead of, as is so often the case, old stuff remounted.

However, after all, the jewellery in vogue in aristocratic circles forms a comparatively very small portion of the production of the trade at large. The middle and even the lower classes form the body of our manufacturers' constituents, whose taste it is continuously necessary to educate up to the desired point of appreciation. A marked improvement has taken place in this direction of late, one of the chief evidences of which is shown in the attention that the public press is just now giving to the subject.

GENERAL NOTES

The death of Mr. Warren de la Rue, the distinguished physicist and astronomer, occurred on the 19th ult.

It is reported that the house of Rothschild has, through the collapse of the Copper Syndicate, lost no less a sum than three millions sterling.

Mr. E. J. Thompson, of the Clockmakers' Company, has issued a report of the watches and movements exhibited at the museum of the Company, which will be useful to all who desire to inspect the work of old masters in horology.

Messrs. A. J. Balfour and W. H. Smith will have conferred on them the freedom and livery of the Goldsmiths' Company on the 22nd inst., when both the Right Hon. gentlemen will be entertained at dinner.

Gilded Watches.—Richard Stamford, a purveyor of flash jewellery, was sentenced last month to five years at the Old Bailey for imitating the Goldsmiths' Hall Mark. He bought some silver watches, coated them over with gold, and marked them in such a way as to represent they were 18-carat gold.

Among the exhibits from Maine, U.S.A., at the forthcoming Paris Exhibition will be a display of Mount Mica tourmalines, cut and mounted in a case. The object of this display is to illustrate the wide range of colour for which these tourmalines are famous. It is expected by American experts that the exhibit will equal, if not surpass, that from any other part of the world.

In consequence of Mr. J. W. Robertson-Scott having accepted a permanent appointment on the staff of a big London "daily," the "Midland Jottings" will be discontinued, at all events for the present. We shall however introduce from time to time substitutes for the "jottings" in the shape of special features in connexion with the trade and doings of the great manufacturing centres.

Gold in Devonshire.—A Torquay correspondent states that much excitement has been caused there by the announcement that gold-bearing rock, said to be equal to ten ounces per ton, has been discovered on property near the sea belonging to the Local Board. At a meeting of ratepayers last month a syndicate was formed with a capital of £1,000, which will be expended in testing and other operations, providing the consent of the Board can be obtained.

The knowledge that the Chancellor of the Exchequer has not interfered with the Hall-mark or abolished the duty on silver, has, says *The Pawnbrokers' Gazette*, been received in all manufacturing centres with much satisfaction. The memorials against the proposed change, presented by the silversmiths and dealers of London, Sheffield, and other towns, have evidently shown that there is at present no wish for any alteration in the duty. The agitation will probably be dropped for a few years, in consequence of the opposition the proposal received on all hands.

Benjamin Franklin's Watch.—Levi W. Groff, of Lancaster, Pa., has in his possession a very old-fashioned-looking silver watch, shaped like a biscuit, and which is said to have been the property of Benjamin Franklin. The watch is an open face, and there is engraved on its back, "Ben Franklin, 1776, Philadelphia," and Mr. Groff says it was the personal property of the great philosopher and was carried by him. It still keeps good time. The watch was made by W. Tomlinson, of London, and it is numbered 511.

Liège Commercial Museum.—The Liège Chamber of Commerce has recently set an example, says the *Journal de la Chambre de Commerce de Constantinople*, which might well be followed by other industrial centres. It has established a commercial museum on an entirely new system. This museum is divided into two sections. The first comprises the articles that Belgium is obliged to purchase from other countries, while the second contains samples of all the articles which are manufactured in Belgium. A library and an information bureau are attached to this museum.

The Turners' Company.—The Turners' Company, London, offer their silver medal, the freedom of the Company, and—subject to the consent of the Court of Alderman—will also obtain the freedom of the City of London for any workman, whether master, journeyman, or apprentice in the trade in the United Kingdom who may send in the best specimen in each of the following, namely, of hand turning in wood, glass, and metal. Bronze medals, certificates of merit, and money prizes will be awarded according to the discretion of the judges in each department, and extra prizes will be given for work in wood exhibited by apprentices, and in glass to individual servitors, foot makers, or boys for simple objects.

The Goldsmiths' Vienna Exhibition.—The finest loan in this recently opened Exhibition is that of the Duke of Cumberland, who has lent not only some rare jewels, including the famous Cumberland diamond, but a surprising assortment of gold and silver ornaments, table plate, tankards, jugs, and goblets. The Liechtenstein family has sent its matchless rubies, Princess Metternich has lent her emeralds, and Princess Reuss some of the largest opals existing. The gold plate sent by the Duke of Nassau alone is estimated as worth £100,000. Among the curiosities of the Exhibition are the gold-mounted dressing case which belonged to Napoleon I., and was presented to the family of Count Bombelles by the Empress Marie Louise.

The Society of Medallists.—This society has awarded its first prize of £25 to Mr. H. Fehr for a model of a medal commemorating the defeat of the Spanish Armada, having on the obverse a bust of Queen Elizabeth, and on the reverse St. George slaying a winged figure, symbolical of the Armada, and surrounded by other figures representing Fame and Æolus. The second prize of £10 was awared to Mrs. Vereker Hamilton for a medal bearing on the obverse a portrait of Captain J. Monteith Hamilton, and on the reverse a huntsman carrying stags' heads in a basket. These medals, and a selection of others included in the competition, will be exhibited by permission of the directors at the New Gallery, Regent Street, during the summer exhibition.

It is said that we may expect to see in one or other of the West-end jewellers before long some specimens of the work of a Mayence metal engraver, which are absolutely unique in their own way. From a coin of any size, from a sixpence up to half-a-crown, he can beat out the most lovely little heads, either classical studies or perfect copies of modern photographic portraits. Formerly he earned about 35 marks a week at his humble calling, and began by doing these tiny medallionettes to please his friends. So far, his *chef d'œuvre* has been a head of Christ, done in pure gold and set in a silver framework, for one of the English Roman Catholic bishops. If he prove himself really capable in executing portraits, he may expect large patronage from the novelty-seekers here, for it would be very charming to possess a likeness of a lover or a near and dear relative or friend in this durable form. He employs few tools, and those of the simplest description. The fineness and delicacy of the specimens which a representative of a contemporary saw last week reminded one of the Renaissance period.

Mystery Gold.—Frederick Lloyd, described as a dealer, of Pimlico, was charged at Bow Street, last month, with attempting to obtain money by means of false pretences from a pawnbroker. A chain he offered in pledge was found to be what is known as "mystery gold." When the prisoner was searched 48 pawn-tickets for 42 diamond rings, four pins, and two watches and chains, pawned in different parts of London, were found on him. They were pawned for £286. Mr. Barney, of High Holborn, pawnbroker, said that the prisoner offered in pledge an Albert chain and a diamond ring. He was doubtful if the chain was gold. Witness asked if he would take £5. He said "Yes," and that the ring had cost him £9. He gave his name as Frederick Staunton, 198, Strand, and said he was on the staff of the *Illustrated London News*. He was also a dealer in jewellery. Considering the story inconsistent, witness sent for a constable and gave the prisoner into custody for giving a false name and address. Witness tested the chain and found there was no gold whatever in it. It was only worth about 2s. The ring could be purchased for £3 in the trade. The prisoner was afterwards charged with attempting to obtain money by means of false pretences. Remanded for inquiries.

Dealing in Plate without a Licence.—At Bromley (Kent), on the 8th ult., Samuel Charles Dean, jeweller, of Sidcup, was summoned by the commissioners of the Inland Revenue for dealing in plate without a licence. On February 25 an officer of the Inland Revenue purchased at the defendant's shop a silver locket for £1. At the time the defendant had no plate dealer's licence, the one which he had taken out having expired some considerable time previously. Mr. L. W. Gregory, solicitor, who appeared for the defendant, said the licence had been taken out, and the Crown authorities were no losers in the matter. He asked for a small penalty to be imposed. The Chairman of the Justices said it was perfectly clear that the defendant had been warned in this matter, and when caught he tried to get out of it by some device. Now the Act provided a penalty up to £50. The Justices considered that if offences of this kind against the Crown were not stopped they would be repeated over and over again. There was a question as to costs, whether, whilst the Crown prosecuted, the costs could be given in addition to the penalty which the Justices might impose. At the present time the licences would be made over to the County Council, and it was a very serious matter for consideration whether they should be bound by their present decision, for something of the sort might occur that the Crown might prosecute and the County Council not pay the costs. They, therefore, did not intend their present to be a precedent for future decisions in any similar case that might come before them. The defendant would be fined £5, including costs.

A Breach of Trust.—At Worship Street last month, Francis Henry Brice, 40, a watchmaker living in Suffolk Road, Hackney, was charged on remand, with feloniously stealing watches entrusted to him to repair. The prisoner had carried on business in a shop at Holywell Row, Shoreditch, as a watchmaker. On the 11th March he received the watch of a Mr. Ransom, to clean and repair, the watch being valued at £18. Mr. Ransom sent on many occasions to obtain it, but the prisoner always made an excuse that it was not ready. Finally, on Tuesday, the 25th March, the prosecutor found that the prisoner's shop was closed and he had absconded. Meanwhile, a Mr. Shipman, printer, of South Street, Finsbury, had left a gold watch, value £15, with the prisoner to repair, and ten days later he discovered that the prisoner had made away with his property. A warrant was obtained, and Police-constable Wilkinson, G division, arrested the prisoner, who then said that he had pawned the watches in question, as well as others, and lost the tickets. He, however, supplied information as to the places he had taken them to, and the watches mentioned in the charge were now produced by an assistant to a pawnbroker at 78, Strand, who had advanced £4 on the £18 watch, and by Mr. Howard, of 80, Newgate Street, who had advanced £3 10s. on Mr. Shipman's watch. Mr. Bushby said he should not convict the prisoner on the charge of felony, but fine him for the unlawful pawning of the two watches £10, and order him also to repay the amounts advanced. In default, six weeks' hard labour.

Sale of Curiosities at Vienna.—The interesting and important collection of splendid examples of the old masters, books, sculptures, gems, snuffboxes, majolica ware, bronzes, tin, iron, wood, and ivory, left by Josef Charles von Klinkosen, was sold last month by auction, in the Künstlerhaus of Vienna. The collection of engraved gems and stones comprised works by W. Brown, Nathaniel Marchant, Hyacinth Frey, Pichler, Lane, Bath, and others. A noteworthy work of art was an ivory crucifix on a silver pedestal, by Raphael Donnor. There were 130 pieces of old jewellery, which is so much the fashion just now, and some rare enamels. Of the 50 snuffboxes, the most handsome was one in grey agate, with mosaic work representing the attributes of Music; another was of gold, with a beautifully enamelled group of figures on the seashore. Yet another showed a lady à la Watteau, playing the lute. The carved ivory and wood comprised many beautiful crucifixes and pictures of incidents in Sacred History. A great deal of well-preserved old Vienna and Saxon china was also sold, besides majolica figures and dishes, among the latter being two large Pesaro plates in Mantegna's manner. Among the most interesting works of art of the whole collection were 47 busts by the Vienna sculptor, J. X. Messerschmidt (1732-1783), representing various emotions, as expressed by the human face—irony, folly, inspiration, hatred, pain, ill-humour, laughter, indignation, melancholy, sweet smell, bad smell, a man hung to death, an old man crying, and many other subjects. Rare furniture, caskets, armour, fans, embroidered materials in great quantities, were also to be found in the collection.

Watch Case Makers in America.—An American correspondent of the *Coventry Herald* writes;—Birmingham and some of its surrounding towns have, I believe, supplied a fair share of the watch case makers now employed in this country. If any more of the craft are thinking of coming here they may take notice that they are not wanted. As in the case of the gold-beaters, there are too many of the trade here already: so it was resolved at a mass meeting of watch case makers held a few days ago in Brooklyn. Recently the manufacturers made a reduction in wages, and introduced a system of taskwork by which it is said the men are obliged to do the same in five days that they previously did in six. By this plan many men are thrown out of employment, and it was decided at a meeting to "condemn the introduction of the task or sweating system . . . . and to combine, agitate, and labour on all opportunities against that and similar iniquitous systems." I learn from the secretary of their union that the watch-case makers have had a bill introduced into the State Legislature which provides that no person shall manufacture or sell a gold watch-case which shall be represented of finer quality or greater carat than it actually is. The union claims that cases have been made and sold of 6, 8, 10, and 12-carat fineness which have been stamped 14 and 18 carat United States assay. A 14-carat case weighing 50 dwt. is worth 32 dols., while a 6-carat case of the same weight is worth only 16 dols. In a circular sent to the State Legislature, the union says, "We do not object to watch-cases being made of any kind of metal or any grade of gold, but we do object to the system of representing watch-cases 14 and 18 carats by some firms, when in reality they would not assay more than 8, 10, or 12 carats.

The silver-wedding gift to the Prince and Princess of Wales contributed by the ladies of South Australia, has arrived at the offices of Sir Arthur Blyth, the Agent-General for South Australia. The present consists of a beautiful chased silver casket, three feet six inches high, containing some 2,500 separate pieces, and weighing nearly 500 ounces. It is designed in two tiers, the whole being surmounted by emblematic figures of England and South Australia. The former figure is reclining on a wheel, and wields a trident. South Australia in one hand holds aloft the Australian flag and the Union Jack, and with the other hand pours forth the productions of the colony from a cornucopia. The doors of the lower portion of the casket, which contains the jewellery, are engraved with a design illustrative of agriculture, and a view of the Waterfall Gully; while those of the upper portion show views of the Post Office and Town Hall of Adelaide, and illustrate respectively the shipping and sheep-raising industries of the colony. Other designs on the casket show the chief fauna and flora of South Australia. The total value of the casket is £1,000. It contains a collarette of South Australian gold mounted with Australian rubies and Brazilian diamonds, and a pair of gold and ruby bangles. The collarette is made of 25 links, and each link is set with three of the rubies and four of the diamonds. Suspended from the collarette is a pendant attached by two pieces of cable chain, and sustaining two cornucopias. A beautifully chased shell occupies the space between these, and in the centre a very large ruby surmounts six diamonds, while close by three pretty coloured rubies hang gracefully in claw settings, a diamond surmounting the centre one. Both casket and jewels have been designed and made by Messrs. Stevenson Brothers, Rundle Street, Adelaide. The presentation has been postponed owing to the death of the Duchess of Cambridge.

The Diamond Market.—No increase in the demand for finished stuff is reported from *Amsterdam*, and the Easter holidays having kept foreign buyers away, the factories are now slack of work.

No improvement has yet taken place in the *Paris* trade, but as there are a few American buyers in the town it is hoped that their presence may stimulate speculation among the dealers.

The usual Cape steamers brought average consignments for the *London* market during the month, and prices being easier sales have been rather brisk.

A demand for medium sized brilliants is reported from *New York*.

Metals.—*Silver.*—Bars, 42$\frac{3}{16}$d.; Mexican dollars, 41$\frac{1}{4}$d. per oz. *Copper.*—Good ordinary brands of Chili bars, at the time of our going to press, closed at £37 5s. to £37 12s. 6d., cash, and £37 7s. 6d. to £37 15s., three months. *Tin.*—Fine foreign, cash, Straits, £92 10s. to £93; Australian, £93 15s. to £94 5s. *Lead.*—Spanish soft, £12 12s. 6d.; English, £12 17s. 6d. *Spelter.*—Ordinary brands, £17 5s.; special, £17 7s. 6d.; English soft, £17 10s. *Quicksilver.*—Importers' price, £8; second-hands, £7 18s. 6d.

TRADE NOTES

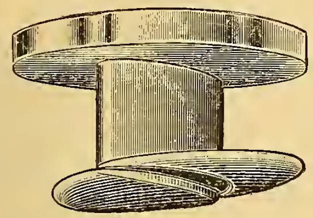
Sun Dials.—Messrs. Francis Barker & Son, the well-known instrument makers, of 12, Clerkenwell Road, London, have lately directed much of their attention to the making of sun dials which, from the great improvement effected both in their design, finish and taste, are now such an acquisition that no gentleman's garden or lawn should be without one, as they are not only very useful for setting the clocks of the house by, but form a very attractive feature to the garden. Messrs. Barker inform us that they supply sun dials with or without pedestals; also vertical dials for buildings, churches, &c., which are very appropriate for the present style of architecture. On visiting Messrs. Francis Barker & Son's extensive workshops which consist of three separate shops in the one building, we saw some handsome dials in course of construction, which would prove not only a novel adjunct to the stock of many of our readers, but should also well repay the outlay involved in such a small departure from the regular lines. The firm are now about sending a new illustrated sheet of sun dials, with a descriptive pamphlet which is very readable. The very interesting book with mottoes and illustrations of old sun dials, edited by H. K. F. Gatty and Eleanor Lloyd, a notice of which appears on another page, can be obtained from the above firm.

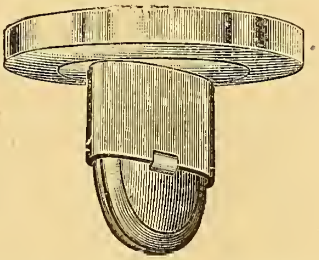
Messrs. Walter Cross & Co. report a good sale for their new patent bookmarker, (advertised in this and former issues). They are now making it in new and chaste designs in gold and silver specially suitable for presentation books.

The new catalogue of Messrs. Thomas Fletcher & Co., of Thyme Street, Warrington, whose London office and showrooms are at 77, Queen Victoria Street, is now before us. The firm are showing over 300 patterns of their specialities in gas heating apparatus, including innumerable patterns of burners, laboratory furnaces, blowpipes, &c., &c., and the establishment should be well worth an inspection by many of our readers to whom economy and cleanliness in the workshop and factory are a desideratum.

Wholesale Traders' Association, Birmingham.—In reference to the notice of this association in our last issue, we are requested to state that we were in error in saying their head offices are at Huddersfield. The head office for the jewellery and fancy trades is at Temple Row, Birmingham, the Huddersfield office being devoted solely to the woollen and textile trades.

Among the staple novelties in demand in the jewellery trade, none occupy a more conspicuous place than the various solitaires, cuff-buttons, and other indispensable shirt adjuncts that are in such constant wear among all classes of purchasers. Messrs. G. E. Walton & Co., whose unflagging enterprise in the manufacture and introduction of these goods is so well known, are now calling attention to two quite new departures of merit in this direction upon which there seems likely to be a run. These are Mensing's Patent Automatic Solitaire, and a collar stud which is, from its construction and strength, called the "Everlasting Seamless Stem" collar stud; neither of which should escape the notice of those who wish to keep their stocks up to date. The former has the advantages of being comfortable and smooth in wear, beautiful in construction and mechanism, and at the same time very strong and durable. It has direct entrance into the button-hole. One turn, when in cuff, expands the back wing, and another turn enables it to be taken directly from the cuff.





The newly published trade catalogue and price list of Messrs. I. S. Greenberg & Co., until last month of 44, Frederick Street, Birmingham, but now of 32, Vyse Street, is just to hand and an analysis of its contents affords an even more interesting half-hour's occupation than do the former issues of this firm's catalogues, inasmuch as there is a considerable addition to the numerous branches of the jewellery trade catered for. In several of the departments a considerable revision of the price lists is noticeable, and the prices quoted for watch and jewellery repairs, re-plating and gilding &c, which are specialities in Messrs. Greenberg's establishment, make the present list a valuable guide to retailers who undertake such jobs.

Turner's Patent Safety Watch Pendant.—This patent pendant which has for some time been applied to watches in Switzerland, is now to be obtained in this country from Messrs. Ashwin & Lawrence, 24, Spencer Street, Birmingham, who are the sole licensees in Great Britain.

"Tom" Williams, of 264, Regent Street, W., who has represented Messrs. B. H. Joseph & Co., of Birmingham and London for the last fifteen years, is leaving them this month.

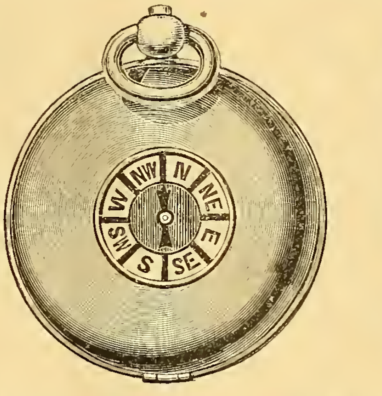
Coventry Watch Movement Company.—The first batch of movements made by the Coventry Watch Movement Company were completed last month. Mr. Scarisbrick, of Prescot, who is managing the works, reports that considerable orders are in hand.

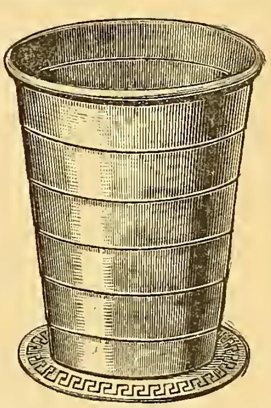
The English Optic Company, manufacturing opticians, having taken new offices and warehouses at 35, Hatton Garden, are now supplying the retail trade direct instead of as formerly through the wholesale houses. Repairs in every department are undertaken, and a point is made of returning them on the same day as received. The Company call attention to the list of departments in which they have a large and varied stock, which is set out in their advertisement on page 23.

The Metal of the Future.—Under this heading we called attention last month to the advertisement (on another page) of the Newport Aluminum Company of Kentucky, U.S.A. This firm, who are now turning out the pure aluminum by a new process at the rate of from two to five tons a day, are prepared to supply the same or the plant for producing it. No cash is required for anything excepting the plant, and the moderate royalty required ($\frac{1}{2}$ cent. per lb.) should create a big demand for the new metal, which is superior to silver and equal to gold in brilliancy, elasticity, malleability, and strength, and is suitable for all kinds of jewellery, ornaments, household ornaments, dentistry, and optical goods. The aluminum bronze, which is the strongest metal known, is supplied by the firm at one shilling a pound with a rebate off. The plant for producing the aluminum, having a capacity of five tons daily, costs 1,850 dollars. The aluminum produced by the process is guaranteed as 96 per cent. pure.

A visit to the Holborn Viaduct premises of Messrs. Backes and Strauss (Limited), would give to the uninitiated the impression that the firm have left the first floor for the regions above. This is not so; Messrs. Backes and Strauss are merely remodelling their offices into one of the very handsomest and most complete jewellery stores in London, in which perfect arrangements for the smooth working of their business are coupled with great attention to the wants and comfort of buyers. The diamond department is particularly worthy of attention; for while the interior arrangements for preventing waste of time in the showing of goods are attended to in praiseworthy detail, purchasers are enabled, from the excellent light in which they are placed, to see at once the quality of the stuff they are looking at. In these days of gigantic showrooms and palatial offices in other branches of trade, it is good to see jewellery firms coming forward to set a good example, and we trust that the firm in question will meet with the success they deserve, in the shape of increased business, in recompense for the enterprise they are displaying.

The Collapsible Drinking Cup.—We have to call attention to this very ingenious and useful article which has just had a further novelty introduced to it in the shape of a compass, thereby making it not only still more useful to tourists, cyclists and others, but adds considerably to its beauty. Another important addition to it is the foot on the bottom of the rings, as shown in the drawing, which makes the cup firmer and prevents the rings falling apart. These improvements and additions will ensure for the Collapsible Drinking Cup an increased popularity during the coming season.





Board of Trade Returns.

The clocks and parts thereof imported during March were of the estimated value of £41,496, in comparison with £42,391 in the same month of last year, and £32,239 in that of 1887.

The following shows the sources of the supply:—

	March 1887	1888	1889
From France	£13,544	£16,493	£14,180
„ United States	£8,317	£7,584	£8,801
„ other countries	£10,377	£18,314	£18,515

The three months of this year give a total import of clocks of the value of £100,788, against £108,541 in the same period of last year, and £87,859 in that of 1887.

The watches and parts thereof imported last month reached the value of £57,932, while in the same month of last year the total was £43,549, and in March of 1887, £63,465. The three months of this year yield a total of £163,428 in comparison with £119,611 in the same period of 1888, and £173,503 in that of 1887.

The plate and plated and gilt-wares exported during March are valued at £32,056, against £30,833 in the same month of last year, and £27,197 in that of 1887. For the three months of this year the total is £87,378, and for the same period of last year, 80,751. For the same months of 1887 the value was £69,490.

The total imports of last month reached the value of £36,225,883 in comparison with £32,590,821 for the March of last year, and £32,794,930 for that of 1887. The result for the first three months of this year is the good total of £106,525,734 against £96,909,085 for the same period of last year, and £96,320,046 for the same months of 1887.

The exports for last month reached the value of £21,381,427, and in the March of last year they were £19,047,307. The same month of 1887 showed a record of £19,002,083. For the three months of this year the exports have reached the total of £60,470,052, in comparison with £56,623,401 for the same months of last year, and £54,065,951 for the same period of 1887.

BIRMINGHAM
NEWS

From Our Correspondent.

Although the month of April has been somewhat broken by the Easter holidays, yet there has been a fairly good trade throughout. The holidays were not so protracted as they have been of late years; a good number of the jewellers were at work on Good Friday, and thus only one week was broken into. The last week of the month (after the holidays) proved rather flat, but there are hopes of a better trade during the space that intervenes between Easter and Whitsuntide than has been the case for some years. The demand for silver goods is certainly on the increase, although the plated wares are declining in request, except as to spoons and forks of the better qualities which continue to sell freely, and the lower qualities of German silver are being replaced by unplated white metal alloys.

* * *

In anticipation of an increased trade in silver goods, various manufacturers are making extensions in order to be in the swim. Mr. F. Venour, junr., silversmith, Spencer Street, has put down a gas engine, of a new and improved type, to work his lathes of various descriptions and thus increase his out-put, finding a demand for his novelties in silver has necessitated this step; purchasers will do well to give him a call before completing their purchases for spring and summer stock.

* * *

A new company is being launched in the jewellery trade here, that of Adie and Lovekin (Limited), with a capital of £55,000 in £10 shares, the object being to acquire the business of manufacturing jewellers, goldsmiths, dealers in precious stones, and of general printers and paper box makers, carried on by Messrs. Adie and Lovekin, in Regent Street, Birmingham. The first subscribers are F. Simmons, J. Adie, A. Lovekin, E. James, A. R. Lancaster, G. D. Macdonald, and E. Rowlands, all of Birmingham. The first directors are F. Simmons, J. Adie and A. Lovekin, with a salary of £75 per year.

* * *

There is a report that the fashion for the season 1889 will be assisted by the general wearing of jewellery, especially pale coral work in various styles. If this prove to be correct, I suppose, the prices of that stone will increase to an almost fabulous amount; in fact, dealers report already that the scarcity of the coral will almost prevent it becoming the rage, as it will be impossible to supply it in anything like large quantities. The result will be that a lot of imitation will be used, at any rate in cheap work.

I notice an illustrated circular issued by the British United Clock Company, Gravelly Hill, Birmingham, and headed Home Industries. They are the makers of numerous patterns of the class of clocks known as "Drum Clocks." They compete both for price and workmanship with the American goods of that class, and the manufacturers wish to call the attention of buyers to the fact that they are also of Home production; this fact should carry considerable weight with every buyer who is an Englishman. The factory at Gravelly Hill is a very extensive premises, and there has also sprung up a colony of artisans' dwellings around it. Whether they are erected by the enterprising clock company or not I cannot say, but they are a striking example of what successful home manufacture will be the parent of, and much credit is due to the promoters and the manager, Mr. Davis.

* * *

I understand that a number of the Birmingham jewellers intend exhibiting at the coming Electrical and Industrial Exhibition in this town, but as the official list is not yet complete I am unable to give all details.

* * *

Re Exhibitions, I hear that a quantity of Birmingham fancy goods have been purchased for the express purpose of sale in and about the Paris Exhibition, which is just opening, and makers of the same are looking forward to repeat orders. As most of the lines are novelties of some merit, they will doubtless give good reports of themselves during the season.

* * *

Another field for Birmingham goods, and one that of late has been somewhat stagnant, is that of the Cape (South Africa). Things seem to be looking up there now at a pace, and, in anticipation of good lines and a "Bar to be made," several well-known members of the Birmingham trade have gone during the last month. Their destination, I believe, is Johannesberg; and, judging from a letter lately published in the *Birmingham Gazette* and sent over here from a local M.P. who is sojourning there, the town of mines is certainly a "happy hunting ground" for the pushing manufacturer. There are several manufacturers already at work there in the jewellery trade, and batches of tools have been sent over by Birmingham houses for their especial use.

* * *

The demand for Hall-marked work is on the increase both in silver and gold, and there are strong evidences that in the future the public will not purchase jewellery of any cost unless marked.

* * *

The premises in Spencer Street, Birmingham, lately occupied by Charles Barber and W. Pearce, also those now occupied by Jones and Lee, have been purchased by Mr. Watkin, die sinker and tool maker, Pitsford Street. It is his intention to alter them considerably, to suit his own business requirements, and he will move into them as soon as Messrs. Jones and Lee's lease expires, which is sometime in June. Both Mr. C. Barber and and Mr. W. Pearce have removed to Vyse Buildings, Vyse Street. Messrs. Jones and Lee will remove to Vyse Street, opposite the cemetery, as soon as their shopping is completed.

* * *

An extraordinary meeting of the shareholders of the Birmingham Dudley and District Banking Company (Limited) was held on Thursday, April 18th, 1889, at the Grand Hotel, Mr. W. Williams in the chair, at which the resolution altering the title of the Company to that of the Birmingham District and Counties Banking Company (Limited), was unanimously confirmed.

Paris Exhibition.—A distinct feature of the Exhibition will be the jewellery section. The total value of the articles to be exhibited in this department is put down at forty million francs, and a small detachment of detectives will "shadow" the expensive objects while they are on view. Suspicious-looking visitors to this section may rely upon being specially looked after.

SHEFFIELD NOTES

From Our Correspondent.

We have been so much accustomed to associate "sweating" with foreign Jews and ready-made clothing that it is somewhat of a shock to find that we have something very like it going on in our midst in connection with the old staple trades of the town. Inquiries which I have been enabled to make among workmen engaged in the trades in question have fully borne out the evidence tendered by the representatives of the Sheffield Trades Council to the commission now sitting. It is the custom for certain workmen of the shrewder sort known in Hallamshire parlance as "little masters," to farm certain kinds of work. These middlemen live like fighting cocks while the men who actually do the work starve on a miserable pittance. As a system like this cannot possibly be of any benefit to the general trade of Sheffield, I heartily wish success to the steps now taken by the workmen themselves to put an end to this state of things. We have no desire here, whatever may be the case in some other communities, to found our reputation for commercial success on any system appertaining to "shoddy."

This reminds me of a pernicious system carried on some years ago in the ornamental engraving branch of the silver trade. This trade, like chasing and some other branches of ornamental work, was carried on largely outside the large works by workmen who worked for more than one large house. The greater part of these men carried on their business legitimately enough, but some few were accustomed to stock their workshops with apprentices, from whose guardians they extorted large premiums. These boys were turned adrift at the end of their apprenticeships with only a superficial knowledge of their trade, and their places filled by other youngsters who were ultimately treated in like manner. The effect has been to glut the market with incapable workmen which has probably done as much as anything else to alter the fashion with regard to the covering of plain surfaces with ornamental engraving.

The state of trade in the town continues satisfactory. The continued upward tendency in the price of coal used for manufacturing purposes is a fair criterion of the state of the "heavy" trades which have not been so prosperous for years as they are now. With regard to the trades with which we have more concern, the leading manufacturers of sterling silver goods are described as being very busy; and it is a noteworthy fact that a considerable proportion of these goods are going to America, where the wealthier classes are evincing a decided preference for our Hall-marked silver. As regards the electro-plate trade the pressure is less—in most branches things being quiet during the past quarter as compared with the closing months of last year. Nevertheless very large quantities of spoons and forks continue to be turned out, one important house being credited with the delivery of 5,000 dozen of spoons in one week. Moreover, the approach of the holiday season is expected to have a quickening effect on the electro-plate trade generally, so that on the whole manufacturers are far from showing any signs of despondency.

One occasionally hears pessimist opinions expressed as to the probable duration of our coalfields, but there is one article of commerce of great importance to the old staple trades of the town whose probable extinction is much less remote. The supply of ivory coming into the London market in anticipation of the usual quarterly sales is watched with considerable anxiety in Sheffield. During last quarter no less than 107 tons were taken out of the London warehouses, showing a briskness of demand which if it continues during the current quarter will scarcely be met by the supplies in hand. The steady approach of civilisation from South Africa towards the interior is gradually narrowing the limits of ivory producing countries, so that at no very distant date we may expect ivory as an article of commerce to be as extinct as the dodo.

The Sheffield press has been honoured with still another contribution from the prolific pen of Mr. Watherston. The Chancellor of the Exchequer has intimated his intention of abolishing the plate duties next year, and so Mr. Watherston thinks the Sheffield manufacturers must bitterly regret their recent action. He sees in his mind's eye nothing less than the complete paralysis of the silver trade between now and the date of the abolition of the duties, and therefore he advises the manufacturers to repair their error by beseeching Mr. Goschen to abolish the duties at once and not prolong the agony. Mr. Watherston seems to forget that the protest of Sheffield was against the abolition of compulsory Hall-marking and not against the abolition of the duties. It is quite true that a good many people think that the abolition of the duties would not compensate for the complications which would arise out of the question of drawback. But this is quite another matter, and the fact remains, as I have stated before, that the general feeling was—indifference as to the abolition of duties, and strenuous opposition to the abolition of compulsory Hall-marking.

The Robbery from Messrs. Stauffer.

At the London Sessions, last month, before Sir P. H. Edlin, Q.C., chairman, George Grant, 40, watchmaker, and George Grant, the younger, 18, also a watchmaker, were indicted for receiving a watch and other articles, the goods of Messrs. Stauffer, Son & Co., of 13, Charterhouse Street, E.C., well knowing the same to have been stolen. Mr. Hutton prosecuted. Mr. Purcell defended the elder, and Mr. Burnie the younger prisoner. It appeared that on the morning of the 14th of January last, Mr. H. Philip Novra, traveller for the firm of Stauffer & Co., jewellers, Charterhouse Street, called at the Union Hotel, Ayr Street, Piccadilly, and left in the coffee-room a bag containing 43 gold watches, 9 silver watches, and 4 crystal ball watches, valued at about £350. Upon his man calling for the bag at half-past two, it was gone, but a similar one was left in its place. Detective-Sergeant Moroney, together with Detectives Bowden and Durrant visited the premises of the elder prisoner in St. John's Road, Hoxton, where he, with his son, carried on business as a watchmaker. There a large quantity of the stolen property was found. The numbers on the cases of the watches had been altered, and in two instances engravings had been made, the first being "Expressley examined by Geo. Ross for the Glasgow Exhibition, 1888." In the second the inscription was, "Expressley examined by Le Sala & Co. for the Italian Exhibition, 1888." It was noticeable that the same mistake in spelling the word "expressly" occurred in both cases. Representatives of both firms named were called, and stated that the watches were not made by them. A witness named Carlos, an engraver, was called, who stated that the watch cases had been sent to him by Grant to have the inscriptions engraved upon them. In answer to the learned judge the witness spelt "expressly" in the proper way. In spelling it "expressley" he followed the spelling upon the ticket accompanying the watches. The learned judge said that the trade of the witness was a very dangerous one, and might bring him very near a criminal dock. Further evidence showed that the movements of silver watches were identified by Mr. Novra. The cases were absent, and about 8 ozs. of melted silver were found in a crucible on the premises. On their arrest the prisoners gave various accounts of the possession of the property, stating that it had been left for repairs and alterations, but no entries relating to them were found in the books. The jury found the elder prisoner guilty and acquitted the son. The chairman sentenced Grant to eight years' penal servitude, and directed that of the money in his possession £20 should go to his wife and £20 to defray the costs of the prosecution.

A New Chronograph.

MR. HERMANN BOVET, of Biehl, has patented what he terms a universal watch, the construction of the principal actions of which is shown in the accompanying illustrations. With the new "time counter" the duration of an observation is determinable from a half-second to 24 hours.

By means of the arrangement shown in Fig. 1, the hour, minute, and seconds hands can be brought to zero of each of their respective dials by pushing in the button in the side of the case. One thing for which an advantage that is not very apparent is claimed, is that the size of the button allows of the chronograph being operated by the wearer without taking the watch out of the pocket.

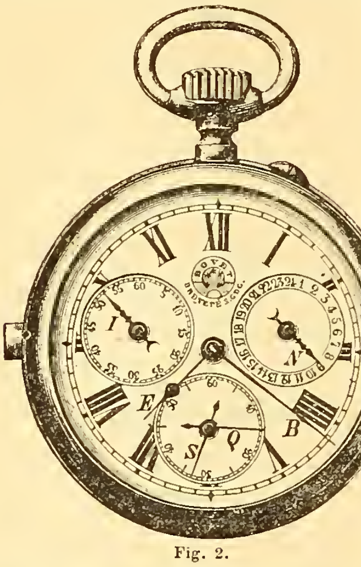
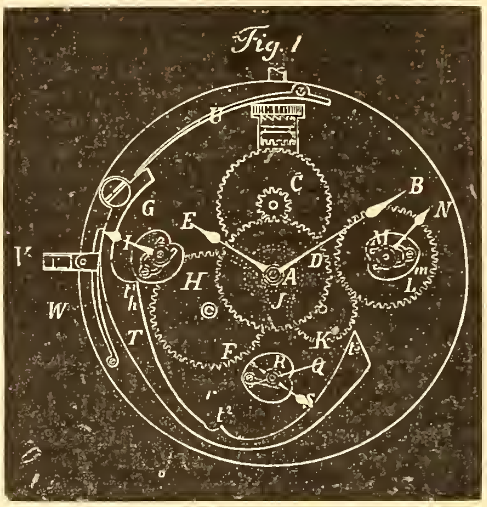


Fig. 2.

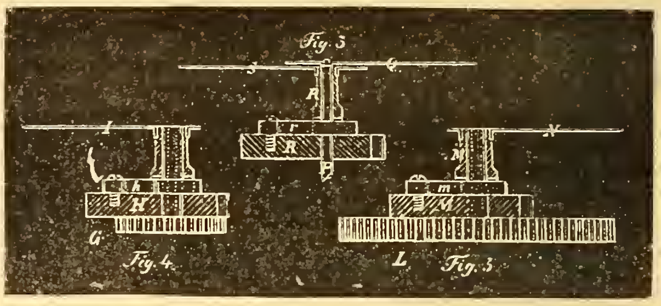
In Fig. 2, Q, B, and E, are the seconds, minute, and hour hands of an ordinary watch. S, I, and N, are the hands of the time counter; I, goes round once in an hour, and the hour-hand N, once in 24 hours. A push of the button brings the hands S, and I, to 60, and the hour-hand N, to 24 on their dials.

In Fig. 1, A, is the canon pinion, C the minute wheel, and D, the hour wheel of the usual hands E, and B. The minute wheel A, also gears with the intermediate wheel F, which again gears with the pinion G. This pinion carries the heart-piece H, and also the minute counter I, and this hand revolves once in an hour.



A, wheel concentric to the hour wheel D, marked J, gears with the intermediate wheel L, which carries the heart-piece M, and the hand N, of the hour-counter. The hand N, revolves once in 24 hours. The seconds hand S, of the chronograph is placed on the axis of the fourth wheel as the usual seconds hand, and revolves once in a minute.

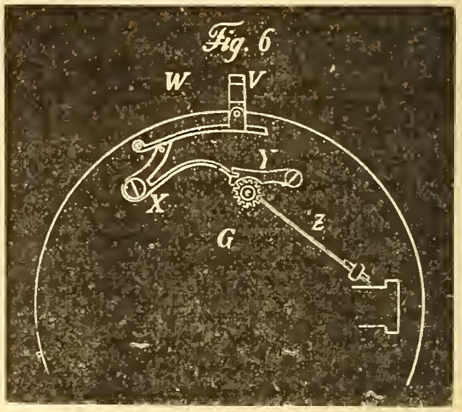
Figs. 3, 4, and 5 show the connection of the hands with their respective heart-pieces and arbors. The heart R, is moveable on its axis P, of the fourth wheel, but the connection of both is secured by a small spring r. During the going of the watch, therefore, the chronograph hand S, goes with the usual seconds hand R, and axis of fourth wheel, but S, can be shifted to the beginning of the divisions through the heart-piece R, that is be brought back to 60. The same happens to the hands I, and N. The small pressure springs in the form of a tuning-fork are easily visible in Fig 1.



A push on the push-piece in the middle part of the watch-case sends all the hands round to O, and a reading of these hands afterwards is all that is required to know the time elapsed.

An error of observation might occur if the minute-hand I, should not come round exactly to the beginning of the divisions, that is, if it should be possible to shift to the right or left. To obviate this, a break, Y, Fig. 6, is made to hold the pinion-leaves of G, while the counterpart W, under the influence of push-piece V is bent inward. The double-armed lever X, carries an upright pin which, when at rest, protrudes between the lever, T, Fig. 1, and the counter jerk, W. During the movement of the push-piece V, an arm of the double lever X, is moved by the counter-jerk W, and the second arm of the lever X, ends in the section of the break Y, so that the last can slightly turn.

The pinion G, remains perfectly at rest during the motion of the heart-piece H, Fig. 1, with its hands I. The jerk T, brings the lever X, back to its original position through a pin. A spring, L, Fig. 6, presses the pinion G, always against the wheel F, Fig. 1, so that there can be no side-shake to disturb the position of hand I. All vibration and hesitation of hands I, is thereby avoided, and the exact return of the hands to zero mathematically secured.



If a cab for instance was hired at 12m. and 10s. past 5 o'clock, the owner of the new chronograph watch can then set the same to zero by a push of the finger on the push-piece. If now at the termination of the hire the three hands of the chronograph show 45m. and 23s. past 2 o'clock, then one may be sure that the hire has lasted for 2h., 45m., and 23s. At the same moment the ordinary hands would show 7h., 57m., and 33s. With the new time-counter there is no necessity to write down the beginning and ending of an observation, and a troublesome, if not difficult, subtraction of the above figures is thereby made unnecessary. The handling of the apparatus is as simple as sure.

The stoppage at a railway station, the duration of a cab hire, game at billiards, or military march, of a ride on horseback, of a journey by rail or vessel, the work of certain machinery, the preparation of chemicals or cookery, &c., make, when made with an ordinary watch, a troublesome subtraction necessary ; this new watch saves the owner all calculations of this kind. The finding the exact moment of meteorological, or other observation, especially at night, can be easily done with this counter. A sentinel or watchman for instance observes something during the night for which a knowledge of correct time is important ; light could not or must not be used to observe the time of an ordinary watch ; he then quickly and without taking the watch out of the pocket, pushes the push-piece and sets the hands.

But the new time-counter has another important advantage, as the chronograph hour hand takes 24 hours for one revolution, the hands can give us universal time, while the large hands with the ordinary motion work show local time.

If, for example, an ordinary watch shows 12h. 29m. 46s. at night in Switzerland, it is only midnight in Greenwich. If now the meridian of the English observatory is chosen as the one from which to count, and Greenwich time as universal time, then all the owner of the watch has to do is to give a push to the push-piece at 29m. 46s. past midnight, in order to read universal and local time simultaneously. If the Frenchman would read both universal and local time, the setting of hands would have to be done 9m. 21s. past midnight, and for Germany 53m. 53s. &c.

One can easily understand, says the inventor, the great importance of this quality in the chronograph watch. The setting of the hands and the division into 24 hours, secure for the new timekeeper a sale both now and in the future. A good mechanism must be as simple as easily repairable, when outside causes disturb its function. The wheels, springs, levers and heart-pieces of the mechanism are all such as can easily be taken to pieces, cleaned, and if necessary replaced.

On concluding his enumeration and claims of the advantages possessed by the new chronograph, M. Bovet winds up with the following caution to the watchmakers who presumably intend to start manufacturing it forthwith. "Every heart-piece must," says he, "be properly fitted spring-tight on its axis. All friction between heart-piece and dial or other part must be carefully avoided. The tension of spring L, Fig. 6, must be very slight in order to avoid a change in the position of the minute hand during the going of the watch, or the forward or return motion of the hands. Watchmakers will appreciate the necessity for these precautions, as it is very evident that should they be neglected the watch would not go at all.

Quaint Conceits in Jewellery.

THERE was a time, not so long ago, when a woman of fine taste could well afford to despise modern jewellery. It was lumpy, meaningless, ugly, and, as a rule, marred the effect of a toilette which it was meant to enhance. "Ropes of pearls," and rivières of diamonds to flash like falling streams of water on the wearer's neck—these were beyond the reach of most women ; and heavy gold manacles, brooches, apparently modelled on the penny tart, and bracelets as heavy as Zenobia's golden chains—these were the general ornaments which made women who understood the art of dress quite willing to obey St. Peter's injunction as far as regards the wearing of gold.

The *Queen* is responsible for the statement that *nous avons changé tout cela* and that the jewellery of to-day is necessary to the dainty completeness of most toilettes. It may be that the device of our trinkets nowadays is too apt to aim at quaintness rather than absolute beauty : but, after all, when one catches the vivid gleam of a tiny cluster of diamonds mid the softness of lace, it is of no great consequence to the effect thereof whether the jewels be set in the shape of a star or of a domino mask, and the multiplicity of designs has the advantage of allowing the ornaments to be individual and expressive of the wearer's self. That this is the aim intended by the craftsman in the goldsmith's art nowadays is proved clearly and divertingly by a glance at the jewelled trifles which deck windows and counters. But let the intending gazer be cautious ; he may only too easily come to look and remain to buy ; a verse may find him whom a sermon flies, and the husband or father who would only wish that he could make certain fair eyes glad with the splendour of a diamond necklace, and feel that though the wish may be counted to him for righteousness, the gratification thereof would be unjustifiable, may succumb hopelessly to the temptation of rejoicing the heart of wife or daughter with that daintiest of bangles with its two diamond and pearl studs, drawn together to fasten hook-and-eye fashion by the slender safety chain with its pearl drop ; or the pretty 1889 lace brooch, the diamond figures so delicately flourished as half to conceal themselves, while in the centre of each figure is dropped a single gem, diamond, emerald, amethyst, ruby, signifying "dear," in a graceful hieroglyph.

And now that hunting is among the joys of the past winter, surely any husband, proud of his wife's prowess in the field, would seize the chance of presenting her with that diamond fox, in memory both of himself and of the day when she gained the brush which hangs as her proudest trophy in her own particular sanctum. A fit present for the wife of a M.F.H. would be the wonderfully executed rider in pink, enabled on a diamond steed, a triumph of setting, the drawing and action of both horse and man being worthy of Alken himself.

For stockbrokers there are two specially designed pins, representing respectively a bull and a bear, to be worn according to the state of the market. It would be unkind to suggest that many wives, besides city madams, may find the latter pin an only too appropriate gift for their lords.

But sweets to the sweet. It is pleasanter to turn to gifts more graceful both in intention and device. If anyone who has music in his soul wishes to testify to soprano or contralto the delight given to him by their concord of sweet sounds, what more fitting tribute could he discover than one of the two brooches representing severally the treble and bass clefs in diamonds? The four-leaved shamrock in gold is a pretty device, whether for fair Unionist or Home Ruler—and in her own household may every woman be both—and so are the wee diamond pins, three in a case—rose, shamrock, and thistle. The bangles are very delicate and pretty, especially a gold one with two gold mice nibbling at a golden bit of cheese, and a platinum and gold curb, with moonstone and diamond heart attached.

This brings us to the latest novelty in jewellery—the trinkets of carved moonstones and diamonds, many of which are quite bewitching in their fantastic prettiness and exquisite workmanship. A diamond harp, with a mermaid for its standard, is really remarkable for the grace and beauty of the tiny figure, with clasped hands above the head, carved in translucent moonstone to the waist, where it is met by the diamond tail. Pierrot's and Harlequin's heads, with diamond and ruby ruffs and caps or three-cornered hats, are as charming as they are bizarre ; and a beautifully executed caprice is a moonstone Pierrot bursting through a paper hoop of white enamel, set round with rubies and diamonds, the whole not being more than an inch in diameter. The pretty children's heads and the lady's face peeping out from behind a diamond fan deserve notice, and a more elaborate design is a little sailor boy sitting up aloft in a very resplendent suit of blue enamel and diamonds.

The moonstone brooches most in favour are set with a carved round face, the typical man in the moon circled within a diamond crescent, and in these the particular beauty of a fine moonstone, the changing sheeny tint of azure it will assume in certain lights, is displayed to advantage. A very beautiful brooch is a moonstone cameo of a 16th century lady, set in a diamond heart surmounted by a coronet.

Ladies' links are coming into fashion again, and very fascinating they are when formed of double studs of fine sapphires, rubies, or other gems, set round with diamonds. A splendid method of setting diamonds now much resorted to is the sun-star, the points of a many-rayed star being circled by another row of diamonds, whence starts forth a fresh succession of rays. On the shoulder or clasping the breast of a draped bodice this jewel is magnificent in effect.

Banquet of the Clockmakers' Company.

THE Court and Livery of the Clockmakers' Company dined at the Albion, on Monday evening, the 8th ult., Mr. Alderman Savory, the Master, presiding. The list of guests included :—

Mr. I. Sebag Montefiore (High Sheriff of Kent), Mr. H. S. Foster, L.C.C., Mr. I. Beck, C.C., L.C.C., Mr. Deputy Atkins, Mr. F. E. Savory, the Rev. T. C. Webster, the Rev. H. L. Nelthropp, Mr. W. Clarke, Mr. D. Clarke, Captain Simkins, Mr. G. W. Adams, Mr. W. Cooke, Mr. W. Lawley, Mr. T. L. Hands, Mr. R. Paget, Mr. E. J. Thompson, Mr. T. A. Bullock, Mr. J. W. Carter, Mr. Hyde Clarke, Mr. H. H. Hyde Clarke, Mr. W. D. Cronin, Mr. H. C. Overall (the Clerk), Mr. C. Welch (Librarian, Guildhall Library), Mr. T. Buckney, Mr. L. Doune, Mr. F. S. Lewis, Mr. W. H. S. Gilbert, Mr. A Rowlands, Mr. J. W. Abbott, Major Finney, Mr. Joyce Murray, Mr. F. W. Nash, Mr. R. W. Sherrard, Mr. W. Barnsdale, Mr. W. B. Maskell, Mr. P. Woodman, Mr. I Woodman, Mr. Hugh Wilson, Mr. W. Beeson, Mr. C. E. Wellborne, Mr. C. E. Atkins, Mr. G. F. Barwick, Mr. G. W. Atkins, Mr. Eugene Collins, Mr. Horne Payne, Q.C., Mr. H. J. Adams, Mr. E. H. Sewell, Mr. Saul Isaac, and Mr. Charles Martin.

After an excellent dinner, the loving cups were passed round.

The Master submitted the customary loyal toasts, observing that the Prince of Wales objected to the second toast being given as "the rest of the Royal family," the Royal family having no rest.

In proposing "The Navy, Army, and Reserve Forces," the Master regretted the loss of the "Sultan," over which he had recently been, and said he was sure they would all put their hands in their pockets and pay whatever might be necessary to maintain in full efficiency our first line of defence.

Major Finney responded for the navy and army, and Captain Simkins for the reserve forces, the latter observing that the whole tone and spirit of the people had been improved by the existence of the volunteers.

Mr. S. Isaac, in proposing "The Lord Mayor, Aldermen, and Corporation," referred to the excellent work which the Lord Mayor was doing in connexion with the volunteers. One of the Aldermen was their Master, and they never had a Master who filled the chair with more success and satisfaction to all. The Corporation was known throughout the world for its hospitality, and irrespective of political creed it assisted her Majesty's Government and the country by entertaining foreign princes and potentates.

Mr. Beek said the Lord Mayor had proved that he was a man well fitted for the office he held, and desirous of carrying out his duties conscientiously and well. He had taken great interest in the subject of technical education, in which clockmakers were also greatly interested. In the Master they had an Alderman who was desirous of carrying out his duty without fear or favour in the administration of justice in this City. The Corporation, which had lived for 700 years, showed no signs of decay. It was ever green, ever ready to do its duty, and its fruits were sound. He was not one of those who enjoyed cutting down old trees, or rooting up old institutions. Having established a government for outside districts all round, they would be content to see how that government conducted itself before they interfered with such an ancient and much-respected institution as the Corporation.

Mr. I. Sebag Montefiore (High Sheriff of Kent), proposed "The Health of the Master" in appreciative terms, remarking that he was associated with a very old and respected family in the City of London. He felt gratitude to the City for the liberal and generous aid it had extended to members of the community to which he belonged. They recollected Sir David Salomons and the battle he waged—and they remembered how the City of London was the first to set the example of distributing equal rights to all persons, independent of their religious opinions.

The Master acknowledged the kind and flattering terms in which the toast had been proposed, and said if they were to trace back this company to the barbaric ages it would be a most interesting and profitable study. Next to food and clothing and lodging, what men most desired to know was how to divide their time. In ancient times they relied upon the sundial. They were told that in ancient Rome they used sundials in summertime, and an instrument regulated by passing water in the wintertime. It was not until about the twelfth century that the first clocks were introduced into this country. About 1288 a clock was erected in Westminster, very much on the same site as was occupied by the present clocktower of Westminster. The next clock, which was erected at Dover, was shown in the Exhibition of 1876. It was most interesting to watch the various improvements made in horology. Many intellectual men had devoted their whole time to the perfection of little improvements, which had been of the greatest value, and their labours had oftentimes been most inadequately rewarded—some having passed away in absolute penury. One of the great delights of clockmakers was to succour those who were in want. They asked not what might have been their creed, their character, or their position. It was sufficient for them to know that they were in need, and they stretched forth the hand of sympathy and help. The active labours of their guild had not passed away. Their craft still existed, and it was their pleasure and delight to try as far as they could to promote invention and to give assistance to those who were endeavouring to promote the interests of the craft. They gave prizes to men who attained great perfection in horology, and did what they could to promote technical education. They had not much money, and theirs was not a company against which the hand of the despoiling angel or devil would be stretched out—but they would endeavour to persevere in the path they had cut out for themselves.

The Master, again rising, proposed "The Health of the Visitors," observing that a relative of one of the visitors, Sir Moses Montefiore, when he attained his 99th year sent him £99 for the Sheriffs' fund for the use of prisoners.

Mr. H. S. Foster responded.

Mr. Payne, Q.C., referred to the old disabilities of Roman Catholics, and said no body had done so much for freedom and equality as the City of London and its guilds, which formed a band of union among citizens. He gave them the toast of "The Wardens."

Mr. Deputy Atkins (senior warden) said this was his jubilee year on the livery of the Clockmakers' Company. Looking back over that period he thought it would be admitted that the governing body had not been mindful of its responsibilities. He reminded them that they had a most interesting museum at the Guildhall. When it was commenced seventeen years ago he believed they had not a single "long clock," now they had a dozen. The other day they had brought to them a very large watch almost as big as a saucer, and they found that the maker of that watch, whose name it bore, was Master of their company 200 years ago.

Mr. G. W. Adams, father of the company, replied for "The Past Masters."

Mr. E. J. Thompson proposed "The Livery," and said he did not understand why onslaughts should be so continually made upon the City companies, whose trusts were discharged with the utmost rectitude.

The Art of the Jeweller.*

By Carlo Giuliano.

IN the present day, our idea of the goldsmith's art is limited to the working upon gold and silver. Our modern goldsmiths would not condescend to work with less costly materials, but during the Middle Ages, and even at the time of the Renaissance, when the precious metals were not so abundant, the goldsmiths worked equally on copper and other metals. I therefore include in my description, under the title of goldsmiths' work, not only statuettes, bas-reliefs, vessels and jewels of gold and silver, but also shrines, reliquaries, and domestic utensils in copper, chased and gilt, and enriched with precious stones and enamels ; the pewters of Briot, so wonderfully finished, and, in short, all objects of metal work which in their time belonged to the goldsmith's art.

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* Read before the Society of Arts on March 19. (From the *Journal of the Society of Arts.*)

One ought not to write the history of an art without access to the monuments it has produced ; but this rule cannot be adhered to in giving the history of the goldsmith's art in remote periods. The richness of the material has occasioned the loss of many artistic treasures, and only a few pieces have been saved from falling a prey to the ignorant cupidity, the necessity, and the repeated disorders of so long a course of centuries, while fashion, that goddess of change, whose destructive worship belongs to every age, has contributed even more than these combined causes to the destruction of the finest specimens of the goldsmith's art.

In 888, Count Eudes, who had just been proclaimed King of France, presented to the Abbey of St. Germain des Prés a magnificent shrine covered with plates of gold and precious stones, as a thank-offering to Heaven for his having successfully repelled the attacks of the ferocious Normans. In this shrine was deposited the relics of St. Germain, to whose intercession the Parisians attributed their deliverance. This monument had therefore every claim to respect, but, nevertheless, in 1408, the Abbot William, desiring to have a new shrine in the taste of his own time, consigned the undertaking to three celebrated goldsmiths, whose work, however beautiful, could never replace the former votive offering of King Eudes. Not satisfied with this first act of vandalism, this same innovating abbot melted down a very rich altar frontal that one of his predecessors had given to the abbey in 1236.

The 13th century, whose works were thus destroyed by the abbot, had furnished him with a precedent for destruction. In the reign of St. Louis, the Shrine of St. Genevieve, executed by St. Eloy, had been melted and remodelled. The men of the 16th century followed in the steps of the Abbot of St. Germain des Prés ; and the tomb of St. Martin which had been enclosed, by order of Louis XI., with a silver grating of exquisite workmanship, as a testimony of the monarch's gratitude to the saint for the death of Charles the Rash, was melted down by command of Francis II., in 1522.

Thus when we see successive centuries of the Middle Ages apparently vying with each other in destroying the most venerable monuments, from no other motive than the love of novelty, we must cease to accuse as the only destroyers of the goldsmith's art the Protestants of the 16th century (who were blinded by religious fanaticism), and Louis XIV. and the Republicans of 1792, who were impelled by the necessity of providing for the defence of their country.

Whatever may have been the causes of their destruction, it is, unfortunately, too true that we possess scarcely any productions of the goldsmith's art of the first centuries of the Middle Ages, and those of a later date than the 10th century, of which but a small number have escaped, are scattered abroad. The consequence is, that after having visited all the collections of Europe, and the treasures of its principal churches, we find ourselves reduced, while tracing even an imperfect sketch of the history of the goldsmith's art, to generalities obtained from obscure texts and imperfect descriptions.

The goldsmith's art was much esteemed by the ancients, as may be easily gathered from their writings as well as from the specimens that have descended to us. The triumph of the Christian religion under Constantine gave a new impetus to the art. We learn from the "Liber pontificalis," of Anastasius Bibliothecarius, that Constantine, at the instigation of St. Sylvester, before removing the seat of empire to the east, presented the churches of Rome with some magnificent gifts. These were crosses of gold, weighing 800 pounds, patens of gold of large dimensions, chalices of gold and silver, cruets for the wine of the offertory, lamps and lustres of different forms, enriched with the figures of animals, baptismal fonts, altar frontals, censers, and even statues of gold and silver.

The popes who succeeded St. Sylvester continued to enrich the churches of Rome with precious gifts of the goldsmith's work, as long as they were not prevented from so doing by the trouble and wars that agitated Italy. Pope Symmachus was the one who, above all others after St. Sylvester, gave orders for the most costly pieces of workmanship. According to the calculation that D'Agincourt has been patient enough to make from the "Liber pontificalis" of Anastasius, they amounted in weight to 130 pounds of gold and 700 pounds of silver.

Constantine had invited to Constantinople the most skilful artists, who flourished there, and it was in this city that the arts which minister to luxury made the most rapid progress. A taste for the works of the goldsmith became a general passion, and the art was no longer restricted to ecclesiastical use. The palaces of the great rivalled the churches in magnificence, these sumptuous residences were adorned with prodigious quantities of vessels of gold and silver, and the women displayed in their jewels an unprecedented luxury.

It was not only at Constantinople and Rome that the goldsmith's art then flourished. Gaul, notwithstanding the invasion of the Franks, had preserved the habits of Gallo-Roman luxury and civilisation, and the first churches built in that country by the preachers of Christianity were soon enriched with vessels of gold and silver.

There remains but little goldsmith's work of the first centuries of the Middle Ages. The only pieces handed down to us are three or four vases of silver, preserved in the Museum Christianum of the Library of the Vatican, which must have served the purpose of cruets ; a toilet casket in chased silver, discovered at Rome upon the Esquiline Mount in 1693.

The destruction of the Roman Empire by Odoacer in 476, the invasion of the Goths, the wars of Belisarius and Narses, the establishment of the Lombards, and the disturbances which were actually breaking out during their dominion in Italy, left that country few intervals of repose in the course of the 5th, 6th, 7th, and 8th centuries. Yet although among the industrial arts the goldsmith's may appear above all others to need times of tranquility for its development, it still did not cease to be cultivated, even by the barbarians.

The only specimens of that period which have reached us proceed in fact from the gifts of Theodolinda, Queen of the Lombards, to the Basilica of Monza, where they are still preserved. They consist of a rich box, enclosing a selection from the gospels, the cover of an evangelarium ornamented with coloured stone, and the celebrated iron crown used at the coronation of the kings of Italy. This crown derives its name from the circle of iron incrusted in the interior, and is asserted to have been forged out of one of the nails of the true cross. It is composed of a kind of jointed collar in gold of from two-and-three-fourths to three inches wide, and loaded with sapphires, emeralds, rubies and other precious stones, uncut, interspersed with flowers of gold. Apart from its antiquity, it possesses no other merit than the richness of the materials of which it is formed, and does not manifest any great artistic talent in the Lombard or Italian goldsmiths of the end of the 6th century. The reputation of these artists rested chiefly upon the crown of Agilulph, which was enriched with fifteen figures of gold—Christ, between two angels, and the twelve apostles.

Unfortunately this magnificent jewel, which was thought worthy of being carried to Paris in 1799, after the conquest of Italy, was stolen in 1804 from the cabinet of medals in the Imperial Library, and was melted by the receiver of the theft. It ought also to be mentioned that the jewels of Monza were restored, and even in part re-made, in the 16th century, by Antelletto Bracciaforte, a celebrated goldsmith of that time, which renders it probable that the golden figures of the crown of Agilulph may have been the workmanship of Antelletto, rather than of the Lombard goldsmiths.

France, on her part, continued at the end of the 6th century to cultivate successfully the goldsmith's art, and Limoges appears to have been the principal centre of this industry. It was in this time that Abbon flourished, a goldsmith and mint-master, with whom was placed the young Eloy, who rose from a simple artisan to be the most remarkable man of his century, and whose virtues were rewarded by canonisation. The apprentice soon excelled his master, and his fame caused him to be summoned to the Court of Clotaire II., for whom he made two thrones of gold, enriched with precious stones, from a model made by the king himself, who had not been able to find a workman sufficiently skilful to execute it. The talents and probity of St. Eloy also gained him the affection of Dagobert I., who entrusted him with important works. St. Ouen, the biographer of St. Eloy, and an anonymous monkish historian of St. Denis, have left us an enumeration of his works of art. The principal of these are a large cross of gold enriched with precious stones, made for the Basilica of St. Denis; the mausoleum of that holy apostle, the marble roof of which was covered with gold and precious stones: the shrine of St. Genevieve; that of St. Germain, and, above all, the shrine of gold of surprising workmanship, which he made to contain the relics of St. Martin, Bishop of Tours.

St. Eloy, having become treasurer and mint-master to Dagobert, was, in 640, elevated to the see of Noyon. It is easy to suppose that when a minister and high ecclesiastical dignitary, the holy prelate would give up exercising personally the art to which he owed his elevation. It was doubtless this which induced him to found the monastery of Solignac, near Limoges, in which he assembled monks skilled in all the arts, who undertook to perpetuate his instructions, and to practise the various branches of artistic industry then principally applied to the production of utensils for ecclesiastical use. Thillo, known under the name of St. Theau, a pupil of St. Eloy, lived sometime in the monastery of Solignac, for the purpose, doubtless, of directing the young monks intended for the profession of goldsmiths.

The example set by St. Eloy was followed, moreover, in after ages by princes as well as bishops; a large number of monasteries were founded with the august mission of cultivating sciences, letters and arts, a mission nobly fulfilled, for the monasteries were their only homes during times of suffering and darkness, in the midst of wars and invasions which threatened the very existence of arts and letters.

Thus when Charlemagne wished to restore the cultivation of the arts in the vast empire he had subjected to his sway, he found in the goldsmith's department artists ready to carry out his views. The churches were abundantly provided with vessels of gold and silver, while princes and bishops rivalled each other in the magnificence of their gifts to the basilicas, restored and embellished by the orders of the powerful Emperor. Charlemagne's will, transmitted to us by Eginhard, contains curious evidence of the immense riches possessed by this prince in works of the goldsmith's art. Among other objects, we must notice three tables of silver and one of gold, of considerable size and weight. On the first was traced the plan of the city of Constantinople, upon the second a view of Rome; the third, very superior to the others in the beauty of its workmanship, was convex, and composed of three zones containing a description of the whole universe, figured with skill and delicacy. Thus science and art had united their efforts in the execution of these monuments.

A considerable number of the finest specimens of the goldsmith's art possessed by Charlemagne followed him to the tomb. It is said that his body was embalmed, and enclosed in a sepulchral chamber under the dome of the church of Aix-la-Chapelle. He was seated upon a throne of gold, and clothed in his imperial robes; at his side was a sword, of which the pommel as well as the decorations of the scabbard were of gold; his head was ornamented with a chain of gold, in which was enshrined a piece of the true Cross. Before him were suspended his sceptre and his buckler, both also of gold.

These riches attracted the cupidity of the succeeding Emperors of Germany, who took possession of them. Probably the spoliation occurred when, in 1166, Frederic Barbarossa, who had obtained from the anti-pope, Pascal, the canonisation of Charlemagne, took his body from the tomb and distributed his bones, to be enclosed in shrines and reliquaries, as those of the saints. The only specimen of goldsmith's work remaining to us belonging to this great man are his crown and sword.

The calamities that befel Italy, during the 7th and 8th centuries, no doubt prevented the popes from following the example of Symmachus and his predecessors, who had endowed the churches of Rome with valuable gifts of metal-work, and the last act of liberality recorded by Anastasius was on the part of Honorius; but as soon as Charlemagne had, by conquering Desiderius, destroyed the empire of the Lombards, and consolidated the temporal power of the Roman pontiffs, we find Adrian I. giving noble encouragement to the arts, and causing to be executed, for different churches of Rome, a large number of tabernacles, candelabra, lamps, utensils of every kind, and statuettes in gold and silver. His successor, Leo III., far surpassed him in munificence, and the extract made from the book of Anastasius, of the value in weight of the gifts made by him to the churches of works in precious metals, does not amount to less than 1,075 lbs. weight of gold and 24,744 lbs. of silver.

In Italy, the great dignitaries of the Church followed the examples set them by the Popes, and the magnificent altar of gold of the Church of St. Ambrose, at Milan, which has passed uninjured through ten centuries, notwithstanding its immense value, gives a high idea of the importance of the goldsmith's art.

It was not Italy alone that distinguished herself in the 9th century by the magnificent productions of her goldsmiths. France had preserved the artistic processes transmitted to her by St. Eloy.

Pieces of metal work of the 9th century are extremely rare. Besides the golden altar of St. Ambrose and the crown of Charlemagne, we have only to instance the cover of the "Hours," written for Charles the Bald, between 842 and 869, preserved in the Imperial Library; this cover, which appears to have been contemporary with the execution of the manuscript, is adorned with two beautiful tablets of ivory, finely sculptured in high relief. The one is surrounded by a large border of carbuncled precious stones, set in little plates of silver of an oval form; the other with a tracery of filagree, skilfully arranged, forming a kind of whorled work enriched with precious stones. To judge from the crown of Charlemagne and this book cover, we should be disposed to assert that the accumulation of precious stones was the chief characteristic of the ancient jewellery. In the 12th century, Suger already expressed this opinion.

But the works of the western goldsmiths could bear no comparison with those of the Eastern Empire. Basil, the Macedonian, did not rest satisfied with restoring the worship of images, but decorated the churches with incredible luxury; gold, silver, precious stones, and pearls, were scattered about, if we may credit the narrative of Emperor Constantine Porphyrogenitus, with a profusion which surpasses immagination. Leo the Philosopher, and his son Constantine, whom we have just named, continued to give noble encouragement to the arts, and it cannot be doubted that the goldsmith's art, which had shed much lustre upon the reign of Basil, was maintained at Constantinople in a very flourishing state throughout the 10th century. In support of this opinion, I draw attention to the fact, that it was from artists of this city the Doge Orfeolo ordered, in 976, the celebrated Pala d'Oro of St. Mark of Venice, the finest specimen of enamelled gold work that has been handed down to posterity. The museum of the Louvre possesses an excellent specimen of Byzantine metal work; it is either the top of a box which has served to contain a sacred book, or perhaps the side of a book cover. It consists of a bas-relief, executed in *repoussé* work upon a plate of gold, representing the two Maries visiting the tomb of Christ, where an angel is seated who proclaims the resurrection. Inscriptions in relief relating to the subject form a border round the picture, and some on the ground are taken from the gospels of St. Mark and St. Matthew. The fine character of the figures, the taste displayed in the arrangement of the draperies, and the finish of the execution, bear a favourable testimony of Byzantine skill, and afford a proof that, in the industrial arts, the Greeks preserved, until the 12th century, their pre-eminence over all other nations of Europe.

The 10th century was for the West an age of iron. Calamities of every kind overwhelmed Italy especially, and it cannot be wondered at that, amidst incessant troubles and devastating wars, Wolvinus, who had rendered the goldsmith's art illustrious at the beginning of the 9th century, should have no successors in the 10th.

Yet, in following the researches of the Abbé Le Bœuf, we find that while all other arts were well nigh abandoned, the French goldsmiths pursued their labours during this disastrous period. The Bishops of Auxerre, Gaudry and Guy, treading in the steps of their predecessors, had enriched their cathedrals with new gifts of metal-work. The Archbishop of Sens, Seguin, had given to his church a superb golden altar, more than nine feet long, enriched with bas-reliefs. This magnificent specimen of the goldsmith's art, the execution of which is attributed to two canons of Sens, Bernelin and Bernuin, skilful goldsmiths, existed till 1760, when it was destroyed by order of Louis XV. in aid of the expenses of the war.

The 11th century was a period of renovation; the principles of ancient art had fallen completely into oblivion, and the goldsmiths which had already departed from them in some of its productions, followed the steps of the other arts. It was necessary for the service of the temples, which arose on every side in a new style, that there should be provided appropriate plate, and the goldsmiths found it necessary to invent other forms for ecclesiastical vessels, and for shrines to contain relics of the saints; the same enthusiasm which led princes, communities, and people to demolish the old churches for the sake of building new ones leading them also to re-fashion the utensils, and consequently to melt down all the pieces of goldsmiths' work. Of this, the great scarcity of ecclesiastical works in metal before the 11th century affords a convincing proof.

The forms then adopted for the different church utensils received the stamp of a severe style, pre-eminently ecclesiastical. Throughout the Middle Ages they preserved this character, which was again altered by the re-introduction of Græco-Roman forms.

In the works of the goldsmiths of the 11th century, as in those of the other arts, we find a certain Byzantine influence which is no matter of surprise. Constantinople was the city, above all others, for the cultivation of the arts connected with luxury, and we have already remarked that it was from Constantinople that Italy sent for the goldsmiths, founders, and chasers whenever, at the end of the 10th century and at the beginning of the 11th century, any large piece of metal-work was to be executed.

Besides, the Eastern Empire and Italy were then in close political and commercial relation. Cicognara remarks that the presents made by the emperors and Greek patriarchs in Italy of pieces of goldsmiths' work, for ecclesiastical use, revived in that country a taste for ornaments executed in materials of gold and silver.

In Germany a different cause produced the same result. The marriage of Otho III, with the Greek princess Theophania, naturally attracted Byzantine artists to the court of that emperor. These introduced into Germany the style of their school, which was quickly adopted by the various arts, at that time endeavouring to strike out into new paths.

Of this we find a proof in several monuments of this period still existing in Germany. Thus, the Royal Library at Munich contains an Evangeliarium brought from the abbey of St. Emeran at Ratisbon. It was written in 870 by the brothers Berengarius, and Luithardus, by order of Charles the Bald, whose portrait is given in one of the miniatures that ornament the book. This precious volume has been overlaid, in the reign of Otho II, with a rich cover of gold ornamented with *repoussé* figures; in the centre, in an oblong frame, enriched with carbuncled gems and fine pearls. Christ is represented in an aureola, the rest of the field is covered with well-drawn bas-reliefs, remarkable for the fineness of the execution. Notwithstanding the inscriptions on this specimen being written in Roman capitals, one cannot fail to recognise the hand of a Byzantine, such correctness of proportion and symmetry of the figures being confined at that period to the best artists of the Greek school.

When, therefore, Henry II. was elevated to the imperial dignity, he found several Greek artists established at the German Court. We know that the great piety of this prince induced him to present the church with pieces of gold-work of the highest importance, some of which are still extant. The finest of these is the golden tabula, or decorated altar-front, given by him to the Cathedral of Bâle, and which was sold by auction some years since, at the time of the separation into two cantons of the town and territory of Bâle. This altar-front, nearly 6 feet wide, forms a Romanesque arcade, where each of the five arches, supported by light clustered columns with scaphoid or cushioned-shaped capitals, forms a niche containing a figure of Christ in that of the centre, the archangels Michael, Gabriel, and Raphael, and St. Benedict in the others; Christ gives the benediction with the right hand, and in the left he holds a globe, upon which is engraved his Greek monogram between alpha and omega. The Emperor Henry and his wife Cunegunda are kneeling at the feet of the Saviour. The whole is executed in hammer or *repoussé* work in high relief. The style of this monument differs essentially from that of the Paliotto of St. Ambrose, at Milan.

Among the other specimens of metal-work which we owe to Henry II., are the beautiful covers of manuscripts in the Royal Library of Munich; also the crown of gold of the sainted emperor, and that of the empress his wife, preserved in the treasury of the King of Bavaria.

Moreover, a taste for objects in metal-work was at that time diffused over all Germany, and a large number of prelates followed the example of the Emperor Henry. Among those who caused magnificent monuments to be executed must be recorded Willigis, Archbishop of Mayence, who presented his church with a crucifix of gold of 600 lbs. weight; the figure of Christ was so admirably fitted together that all the limbs could be made to move at their joints, and the eyes of the figure were formed of precious stones. We must mention also Bernard, Bishop of Hildesheim, himself a proficient in the goldsmith's art, as some pieces attributed to him still exist in the treasury of the Cathedral of Hildesheim, viz., a crucifix in gold enriched with gems and filagrees, and two candelabra. When we see Germany producing such magnificent specimens at these, the eulogiums awarded to that country by Theophilus, for its works of gold and silver, can no longer be a matter of surprise. The goldsmith's art was, about the same time, much patronised by Robert, King of France, who richly endowed a number of churches and monasteries he had founded with the productions of that art. The French, less conservative than the Germans, have kept nothing of their ancient metal work. We are, however, inclined to refer to this epoch the beautiful box of the Museum of the Louvre. The golden bas-relief and the general character of the box appear to be of French origin, but the enamels added to its decoration, and set in the same manner as the cabochons that accompany them, are evidence of Greek workmanship.

Theophilus, alluded to above, deserves more particular mention. This writer, a simple monk—"humilis presbyter, indignus nomine et professione monachi," as he styles himself—but an eminent artist, has left us, in his "Diversarum Artium Schedula," a treatise containing the technical processes of almost all the industrial arts of his time. Seventy-nine chapters of the third book are devoted to the goldsmith's art. A perusal of this treatise will enable us to estimate the variety of information required by a goldsmith in the 12th century.

In consulting only the list of tools with which Theophilus enjoins the goldsmith to furnish his workshop, we see that he was expected to know how to grave his metals with burins and and scalpers, to execute bas-reliefs and figures in *repoussé* work, and afterwards to chase them; he must himself be able to compose the "nigellum" for filling the incisures of his fine engraving, and to make the *cloisonné* enamels, with designs in gold, mixed alternately with gems and pearls in the ornamentation of sacred vessels; nay, further, it was necessary that he should be a skilful modeller in wax, and know how to cast figures in full relief intended for the decoration of his pieces, and the handles in the form of dragons, birds, or foliage, which he would adapt to his vases. After having described the utensils necessary to the goldsmith, Theophilus enters on the technical part of the art, and selecting as examples the most important pieces of church plate, gives instructions for making a chalice, a cruet, and a censer. This engraving, chasing, and sculpture, these nielli and enamels of which Theophilus explains the processes, were only adapted for vessels of high price, to which none but the nobles, prelates, and rich communities could aspire; but the master forgets nothing, his treatise is complete. To accommodate persons of moderate fortunes, he teaches the manner of making pierced works, of impressing silver and copper with stamps; nor does he even overlook the poor in treating of the decoration of books.

The goldsmiths we have hitherto named were, with few exceptions, monks, and the pieces of metal-work described have all an ecclesiastical character. At the beginning of the 14th century, art emerged from the cloisters and took a wider range; the goldsmith's art from that period was no longer employed exclusively in the service of the church, but in that also of rich and noble individuals. Soon luxury made such progress that restrictive laws appeared necessary. An ordinance of 1356, issued by King John, prohibited goldsmith's "d'ouvrer vaisselle, vaiseaux, ou joyaux de plus d'un marc d'or ni d'argent, si ce n'est pour les eglises." But these ordinances were powerless against princes, whom they on the contrary favoured, by giving to them alone the right of possessing a considerable quantity of plate. It is, however, easy to conjure up visions of all these riches by means of the very detailed and well written inventories of two of the richest princes of that age, Charles V. and his brother, the Duke of Anjou, King of Naples and Provence. The inventory of the Duke of Anjou especially possesses this remarkable peculiarity, that, although very voluminous, it is signed with his own hand. The royal editor does not confine to a dry enumeration of the objects in his treasury, but considering them as so many specimens of art, he describes them with minuteness and enthusiasm of an amateur.

The Duke of Anjou delivered an enormous quantity of gold to his goldsmith for the purpose of making him a "nef," the piece of plate in which the nobility of those days displayed the greatest luxury. The nef was a kind of box in the form of a ship, which was placed upon the table of a sovereign or great person; it had a lock to it, and served to contain the goblet and various other utensils for the owner's private use. All these pieces of goldsmith's work were enriched with subjects executed in fine enamelled chasings.

The names of mediæval artists have in our day become the subject of careful inquiry. We cannot better terminate this part of the subject than by giving the names of the goldsmiths in France in the 14th century, who are mentioned in the inventories of the time as having executed the finest of the pieces therein described. These certainly must have been the first masters of the day. They are:—Jean de Mautreux, goldsmith to King John; Claux de Fribourg, who made a gold statuette of St. John for the Duke of Normandy, and a superb cross for the same prince when he became king; Jean de Piguigny, maker of the Duke of Normandy's diadem; Robert Retour, goldsmith at the *conciergerie* of St. Paul; Hannequin, employed to make the three new crowns of Charles V.; and Henry, goldsmith to the Duke of Anjou.

Nearly all the churches of Germany were despoiled of their specimens of the goldsmith's art at the period of the wars produced by the Reformation. Yet there still exist in the treasuries of some cathedrals, as well as in the museums, many pieces that show that the Gothic style was invariably adopted by the goldsmiths until the first year of the 16th century.

It was only towards the end of the first quarter of the 16th century that the French and German goldsmiths adopted the Italian style, which will next occupy our attention.

The political division of Italy into a number of petty sovereignties, and the liberty enjoyed by many of the great towns, were eminently favourable to the development of the art of luxury. The princes, the great dignitaries of the church, the rich and noble merchants of Florence, Venice, and Genoa, and other opulent towns, all vied with each other in magnificence. The armour of the captains, the plate of the princes and nobles, the jewels of the ladies, the sacred vessels and the decorations of the altars, all furnished incessant occupation for the goldsmiths; so that, notwithstanding the intestine and foreign wars which almost constantly desolated Italy until towards the middle of the 16th century, the art was held in higher esteem in that country than in any other in Europe.

At the end of the 13th century, when Nicholas, John of Pisa, and Giotto, cast off the Byzantine yoke, and raised the arts from their previous state of langour and lethargy, the goldsmith's art would no longer have been esteemed in Italy, had it not kept pace with the progress of sculpture, of which it was the offspring; and accordingly goldsmiths were seen following the lessons of the Pisan artists and ranking themselves among their pupils. From this period the goldsmith's art made rapid progress in Italy. The goldsmiths increased in number, and when we know the great Donatello, Filippo Brunellesbhi, the bold artist of the cupola of the Cathedral of Florence; Ghiberti, who executed the wonderful gates of the Baptistry of St. John, all had goldsmiths as their first masters, and themselves practised the goldsmith's art, we may form some idea of what artists these Italian goldsmiths were of the 14th, 15th, and 16th centuries, and what admirable works they must have produced. But, alas! these noble works have almost all perished; their artistic worth proved no safeguard against cupidity, or necessity, the fear of pillage, or the love of change. But a very few names even of these skilful artists have descended to us, and in making known those preserved to us in the writings of Vasari, Benvenuto Cellini, and others, we can rarely point out any of their works as being still in existence.

In 1286, John of Pisa had enriched with bas-reliefs of enamelled silver the high altar of the cathedral of Arezzo, where we see the Virgin, between St. Gregory and St. Donato, sculptured in marble. This great master did not rest satisfied with paying a tribute to the taste of his age by these pieces of the goldsmith's art: he even made a jewel, with which he adorned the breast of the Virgin. This jewel, in which were set precious stones of great value, cost the people of Arezzo, according to Vasari, 80,000 florins of gold. It was stolen by some soldiers, and the bas-reliefs of silver and gold have also disappeared.

The brothers Agosto and Agnolo, and Andrew of Pisa, all belonging to the school of John, reckoned many goldsmiths among their pupils, and Andrew in particular rendered great services to the goldsmith's art by bringing to perfection the technical processes of casting and chasing. Thus the early part of the 14th century was one of those brilliant periods of Italian metal work.

Maestro Cione was also a celebrated goldsmith of the first-half of the 14th century. Vasari cites among his finest works, and as being something marvellous, a bas-relief, the subject of which is taken from the life of St. John the Baptist, with which he had ornamented the altar of that saint in the Baptistry of Florence. This altar, of silver, was begun in the 13th century, but was destroyed in 1366, to substitute for it the one that still exists. The beauty of Cione's bas-reliefs saved them from being melted, and procured them a place in the new altar, upon which they may still be seen. His death occurred shortly after, in 1330, and the high repute in which he was held is proved by the number of pupils, all artists of merit, that he left behind him. Among these are Forzore d'Arezzo, whose fine translucent enamels upon relief were remarkable for their beauty; and Leonardo of Florence, son of Giovanni, who showed himself a more skilful draughtsman than his rivals, and became the first goldsmith of that city.

(To be continued.)

Important Action against Pawnbrokers.

At the Lambeth County Court on the 9th ult., before His Honour Judge Powell, Q.C., the plaintiff who trades as Petts and Co., jewellers, 167, New Cross Road, sued Messrs. William Humphrys and Son, pawnbrokers, of 15, Peckham Rye, for the return of certain goods said to have been illegally pawned by three of the plaintiff's agents, or in the alternative, their value £11 3s.

Mr. Watts was counsel for the plaintiffs, and Mr. Grain for the defendants.

In support of the plaintiff's case a man named Tomkins was called and said he was employed by the plaintiff as an agent; his wife pawned these watches belonging to the plaintiff.

Cross-examined: He would swear he did not give a portion of the money he received from the defendant to the plaintiff.

Mr. Grain: On August 9th you pawned a watch for 9s. 6d., at what price did you value orders on that sample?

Witness: About £2. The plaintiff dismissed him after he gave up the pawn-tickets.

The plaintiff swore that the articles claimed were pawned without his knowledge.

Cross-examined: He was described in the London Directory as a House and Estate Agent. He formerly carried on business in Furnival's Inn as a debt collector, and at Walworth as a debt collector and money-lender. He had also traded as the Guildhall and Commercial Agency. He filed his petition in 1882, and had not got his discharge.

No evidence was called for the defence.

Mr. Grain, however, said it was a matter of very great importance to his clients, a body of pawnbrokers. A number of these had bound themselves together into an Association to protect their interests, and he was instructed by that Association. It was a very serious matter for them, and they had determined to fight such cases. The business carried on by the plaintiff, Petts, was a strange one, and he seemed uniformly unsuccessful. He had been a scrivener, money lender and debt collector in Furnival's Inn. Being unsuccessful there he went into the City, but was again unfortunate. The present claim, he contended, ought never to have been made. It was for £53, whereas the maximum value of the articles was about £25 at the utmost. On August 9th a watch was pawned by Tomkins for 9s. 6d. Petts had the ticket, and if he had cared to pay 9s. 6d. he might have had the watch. Instead of that he claimed £2 5s. Another watch was pawned by Goldberg for 10s., and a claim was now made for £2 5s. Tomkins again on Oct. 29 pawned a further watch for 7s., for which 30s. was claimed. A document had been put in signed by Tomkins and coming from Petts, which made Tomkins the plaintiff's agent. He (Mr. Grain) had cross-examined Petts and asked him if Tomkins would be justified in taking one of the sample watches and showing it to a person and, if the latter wanted that particular watch, selling it him, and Petts had said "Yes." Now the Act said, "any agent who shall thereafter be entrusted with the possession of goods, or of the documents of title to goods, shall be deemed and taken to be the owner of such goods and documents, as far as to give validity to any contract or agreement by way of pledge, lien or security *bonâ fide* made by any persons with such agent so entrusted as aforesaid, as well as for any original loan, advance, or payment made upon the security of such goods or documents, as also for any further or continuing advance in respect thereof, and such contract or agreement shall be binding upon and good against the owner of such goods, and all other persons interested therein, notwithstanding the person claiming such pledge or lien, may have had notice that the person with whom such contract or agreement is made is only an agreement."

His Honour asked for a copy of the Act, and also if it had been repealed.

Mr. Grain informed his Lordship that it was still in existence.

His Honour addressing the jury, said in this case an agreement dated May 13th, 1888, was entered into between Petts and Tomkins. Petts was the principal, and Tomkins was then called an agent, and by the Act cited by Mr. Grain, the Factors' Act, 1842, and which his lordship again read to the jury, the plaintiff could not recover the goods. Petts had in his possession certain goods, watches, &c.; those he delivered to Tomkins, and other agents for the purpose of selling. They beyond a doubt, instead of selling them, went and pledged them. Having pledged them, Petts said the pawnbrokers must give the pledges up, as they were his goods, and the pledger had no authority to pledge them. At first sight it looked as if that was so. But the Act of Parliament he had read came in, and the persons were really his agents. There was a doubt about one of them, but he was satisfied he was entrusted in some manner with the goods for dealing with them. It was for the jury to say whether they considered him so. He told them as a matter of law there was no answer whatever to the defence.

The jury thereupon found for the defendants.

Judgment accordingly with costs.

On the Regulation of the Compensation Balance of Time-Keepers.

By Edward Sang, LL.D.*

It is proposed to offer, in the present paper, some suggestions with the view of facilitating the delicate and tedious process for regulating the compensation and the rate of a balance.

In order to regulate the rate, we bring the timing-weights, which are placed on screws at the ends of arms, nearer to or farther from the centre, according as we wish to accelerate or to retard the motion. For this we have to estimate the small part of a turn which may be needed for our purpose; a scarcely perceptible touch may suffice. But these weights have been already arranged in adjusting the equipoise, and must be both turned by exactly the same quantity in order that the equipoise may not be disturbed. We ought then to have the means of determining exactly the quantity of motion.

These weights are too small to have their circumferences graduated, and the following contrivance may be had recourse to:—

On the stalk of the turn-screw we fix a light wheel having a diameter of an inch or so, and having its circumference graduated and numbered. I use the division into 100 parts, the tenths being marked 0, 1, 2 . . . . 7, 8, 9, and the wheel being so set as that the number 0 and 5 are in the direction of the edge of the screw-driver. Placing this edge, the faces of which should be carefully dressed, into the cut on one of the timing-weights, we easily estimate the position by noting that division which is uppermost, and we are thus enabled to make any required change with great precision. This little contrivance is useful for many other purposes.

The ultimate regulation of the rate must necessarily follow the adjustment of the compensation, but it suits us better to take it first. Suppose then that we have to regulate a chronometer; taking it as it comes into our hands we first of all ascertain its rate, either directly by astronomical observation, or indirectly by comparison with an already regulated time-keeper. In an example before me, the daily rate was $3^{\mathrm{s}}\cdot9$ (say 4 seconds) losing. The positions of the two screws were A, 13; B, 17. Having given to each of them half a turn inwards, that is into positions A, 63; B, 67; the rate was again taken, and after an interval of several days, was found to be $28^{\mathrm{s}}\cdot0$ gaining; wherefore the change of rate for one turn of the timing-screws may be put down as 64 seconds. In order to find the requisite correction we have the proportion $64^{\mathrm{s}} : 28^{\mathrm{s}} :: 100^{\mathrm{d}} : 44^{\mathrm{d}}$, so that we must turn the screws backwards by 44 divisions, that is into the positions A, 19; B, 23. After 82 days the mean rate was found to be $0^{\mathrm{s}}\cdot29$ gaining, for which an additional correction of $0^{\mathrm{d}}\cdot45$, or rather less than half a division, is needed.

It is very likely that this simple expedient has occurred to and been used by others; but I have not seen it anywhere described.

For sea-going chronometers especially, it is of great importance to have the error in rate exceedingly small: now we shall find it by no means easy to make, with precision, the residual correction above found to be needed; and it might be well to place alongside of each of the principal timing-weights one much smaller, say of the tenth or of the twentieth part of the weight, and so to get a more delicate adjustment. In our case we should then have had to turn these auxiliary weights out by 4·5 or by 9·0 divisions, if with the same screw-pitch.

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* Read before the Royal Scottish Society of Arts, 17th February, 1888.

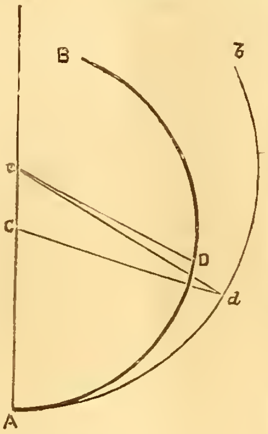
The above work may be entered in the chronometer log-book thus :—

Chronometer 941.

Positions of Timing-Weights. A	B		Rate.
13	17	. . .	3·90 losing.
63	67	. . .	28·00 gaining.
19	23	. . .	0·29 gaining.

The compensation is effected by help of arcs composed of an inner layer of steel and an outer layer of brass, and which therefore change their curvature with every change of warmth. We make the adjustment by changing the positions of weights along these arcs.

Let AB be one of those arcs fixed at A to the end of the balance-arm CA, and free at the other end B, and let us imagine that, on account of a fall in temperature, it has become more straitened out into the form A*b*, whose centre of curvature is at *c*. A weight fixed on the arc at the point D will now take up the position *d* farther removed from C, the centre of motion. But the quantity of motion of that mass D, for a given angular velocity, is proportional to the square of its distance from the centre, wherefore the influence of the weight D is measured by the difference between the squares of CD and of C*d*.



But $Cd^2 = cd^2 + Cc^2 - 2cd.Cc.\cos Acd$

$= CA^2 + 2Ac.cC\,(1 - \cos Acd)$

wherefore, $Cd^2 - CA^2 = 2Ac.cC.\ \mathrm{ver}\ Acd$;

and it thus appears that the influence of a weight is proportional to the versed side of its angular distance from the fixed end of the arc, or, what is the same thing, to the square of the chord AD.

If, then, the circumference of the balance be graduated so as to show the angular distance of the weight from the fixed end of the arc, we shall be enabled, by help of the ordinary trigonometrical tables, to effect the compensation.

Having placed the weights close to the fixed ends of their respective arcs, we observe the rate of the time-keeper when in a warm, and afterwards when in a cold place, noting carefully the temperature and the rates. In the same way we proceed after having moved the weights to the farther ends of their arcs. By this means we ascertain the effect of a given change of temperature for each of the two positions ; and it is clear that, unless the compensation be underdone in the former and overdone in the latter case, the adjustment is impossible.

As an example of the mode of proceeding we may take a purely imaginary case.

With the weights at 8°, the chronometer's rate was found to be 34^{s}·7 slower for a change of 40° Fahr. in temperature. With the weights at 167° the change of rate was 7^{s}·9 faster for a like change of temperature.

Position of Weights.	Vers.	Change of Rate.
8°	·0097	—34·7
167	1·9744	+ 7·9
Diff.	1·9647	Diff. 42·6

hence we have the proportion—

42·6 : 7·9 :: 1·9647 : ·3643

whence 1·9744—·3643=1.16101 is the versed sine of the proper position for the weights. On consulting the table we find that this versed sine belongs to 127° 36′ ; and, placing the weights accordingly, we expect to find the compensation right.

For pocket watches, the compensation is done by means of several weights screwed into holes made at intervals along the arcs. Sometimes these intervals are unequal, sometimes the holes are equably spaced.

I shall suppose the balance-rim to have 40 holes arranged at equal distances, that is, at 9° of the ancient or 10° of the modern graduation. The two at the ends of the arms serve to hold the timing-weights, leaving 19 holes in each arc for the compensating ones.

Were we to use one weight for each arc, we should only have 19 positions to choose from, and could only expect to get a good compensation by chance. If we use two weights the number of different combinations becomes $\frac{19}{1}\cdot\frac{18}{2}=171$, so that our choice is greatly extended ; not only so, each weight is now only half of the preceding single weight, and thus our hope of getting a good result may be said to be improved 18 times. With three weights in each arc the number of combinations become $\frac{19}{1}\cdot\frac{18}{2}\cdot\frac{17}{3}=969$; so that in this way we may get an arrangement sufficient for our purpose.

As an example, let us again take an imaginary case :—Having placed the three weights of each arc as close as possible to the fixed end, that is in holes 1, 2, 3, we find that, for a certain change of temperature the rate has been slower by 34″·7 (as in the former example); and that, when the weights are placed near the free end, that is in holes 17, 18, 19, the change of rate for the same rise of temperature has been 7·9″ gaining ; and we wish now to discover in what holes the weights should be placed in order that there be no change of rate.

The sum of the versed sines for the holes 1, 2, 3 is ·170, while that for 17, 18, 19 is 5·810 ; the difference between these sums, that is 5·640, corresponds then to a difference of 42·6 in the change of rate; wherefore making the proportion

42·6 : 7·9 : : 5·640 : 1·046

and subtracting this result from 5·810, we find that the sum of the versed sines should be 4·764, in order that there be no change in the rate. Now the three holes 10, 16, 18 have the sum 4·760, and into these holes, therefore, we fix the weights.

But, as soon as we begin to make a list of the sums of the versed sines, we encounter this inconvenience that, for a division into 40 parts, the sums for 9 and 11, for 8 and 12, for 7 and 13, and so on, are all alike, so that although we have 969 arrangements we get far fewer actual results. This happens with all even numbers, because the holes fall equally on either side of the 90th degree.

And again, when an odd number is used, there are so many divisions-and-a-half in each semicircle, as is seen in the accompanying figure, so that when the number is considerable (in this case 39 or twice 19½) the space left for the breadth of the arm is restricted. Assuming this number 39 to be the largest that can be used, I have computed the versed sines and their sums in twos and in threes as given in the subjoined table.

In the first part of the table, the combinations are arranged in simple order, so that the sum of the versed sines for any one of them may be found at once. In the second part of the table the order of the sums is followed, and we are thus enabled to discover into what holes the weights must be placed for producing a given effect.

Resuming the preceding example, let us suppose that when the three weights are in the holes 1, 2, 3 of this balance, the rate for a given rise of temperature has been slowed by 34″·7 ; and that when they are placed in the holes 17, 18, 19, the rate for the same change of temperature has been accelerated by 7″·9 ; the computation for the proper position of the weights will be as under :—

Holes.			Vers.	Change of Rate.
1	2	3	·1790	—34″·7
17	18	19	5·8877	+ 7″·9
		Diff.	5·7087	Diff. 42·6

42·6 : 7·9 :: 5·7087 : 1·0587

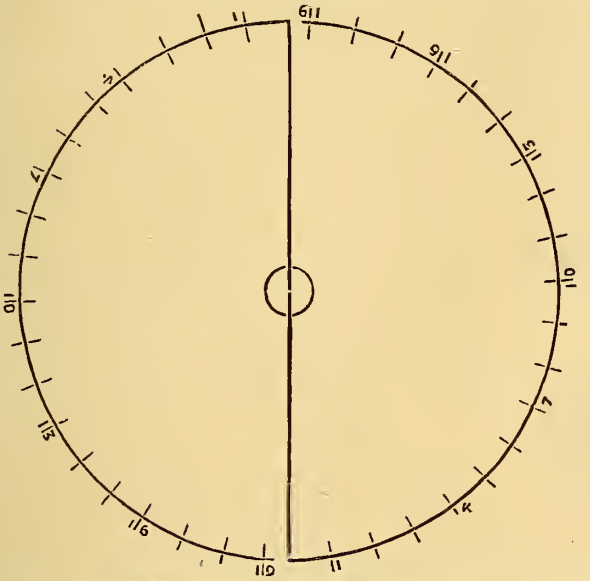
5·8877 — 1·0587 = 4·8290

and on inspecting the second part of the table, we find that this sum of versed sines belongs to the combination 11, 14, 19.

The number 39 being divisible by 3, the 13th hole falls at 120°, and it follows that the sums of the versed sines for n, $13-n$ and $13+n$ is independent of n, being always 3·0000, and hence, as we see, the six combinations 1, 12, 14 ; 2, 11, 15 ; 3, 10, 16 ; 4, 9, 17 ; 5, 8, 18 ; and 6, 7, 19 all give the same sum. Also it sometimes happens that the sums for two combinations differ so little as to be undistinguishable in practice, as in the case 7, 13, 16, and 9, 10, 19. Hence inevitably the number of effective results is always less than the total number of combinations.

The use of four, instead of three weights, would augment the number of combinations $\frac{16}{4}$ that is four times, bringing it up to 3876, and so augmenting the closeness of the adjustment ; for this a much more extended table is needed.

When we reduce the number of holes in the semicircumference we lessen the number of combinations in a much higher ratio ; thus if, instead of 19½ divisions in the half circle, we were to make only 12½, the number of combinations, three and three, would be $\frac{12}{1}\ \frac{11}{2}\ \frac{10}{3}$ or only 220, while those four and four would be $220+\frac{9}{4}$ or 495, instead of 969 and 3876 as before ; but even these numbers would suffice for the great majority of time-keepers. A table of the sums of the versed sines for three weights is subjoined.*



These two examples (39) and (25) may be regarded as the extremes likely to be used, and may serve to show how a little computation may obviate irksome trials, and how the same method may be applied in the case of other divisions.

Mr. Arnold keeps one Eye open.

A WELL-DRESSED, educated person, giving the name of Chas. Searle, aged 31, described as a traveller, of Percy Street, Tottenham Court Road, was charged last month at the Marylebone Police Court with attempting to steal a diamond ring, the property of Mr. Arnold, a jeweller, of 72, Baker Street, Portman Square. The prosecutor said the prisoner entered his shop on Wednesday, and asked to look at some lady's diamond rings. He took a tray out of a case filled with rings, and placed them on the counter in front of the prisoner. Prosecutor took a 14-guinea ring and several 12-guinea rings from the case and handed them for inspection to prisoner, who, having looked at them, put them on to the counter and proceeded to look at others. A diamond sapphire ring was then picked out, and as it had no ticket attached to it prosecutor had to look through his eyeglass to see the mark scratched on the inside to see the price. As he looked through his glass he kept his other eye open and on the tray, and he saw the prisoner pick up a ring with his left hand, and then lean his body over the counter, and at the same time he picked up one or two other rings with his right hand and asked the price of them. Being suspicious owing to what he had seen, prosecutor at once put the rings back in their respective places in the tray, and then found that one of the rings were missing. Addressing the prisoner he said, "Give me back the ring you have in your hand." The prisoner replied, "I was just going to do so," and at the same time threw the ring on to the counter and rushed towards the shop door. Prosecutor shouted out, "You stop here," and ran to the door, and by the use of his foot against it temporarily barred the exit of the prisoner. There was a scuffle, during which the prisoner's hat was knocked off, and, getting free, the prisoner ran off up the street without his hat. Fortunately, a constable happened to be passing the shop at the time, and prosecutor told him to run after the prisoner, and he did so and caught him. The prisoner, in an excited and indignant manner, said that if the prosecutor would go with him to Messrs. Druce & Co.'s he would find he was not a thief, but a respectable man who had travelled for that firm for ten years. He could also give references as to character, and he mentioned the names of seven or eight leading tradesmen in the West End. The prosecutor called him a scoundrel while he was in the shop, and that agitated him. He could offer bail to the amount of one, two, or three hundred pounds if necessary. The prosecutor said the prisoner had not sufficient money on him to purchase a diamond ring. The police constable said he saw the prisoner running down Baker Street without his hat, so he ran after him, and called "Stop thief!" After a smart chase he caught him in George Street. When told he would have to go back to the shop the prisoner objected, but ultimately went, and was there charged by Mr. Arnold. On the prisoner he found 19s. 7½d. and a £5 "Bank of Engraving" note. The prisoner (smiling and waving his hand): That's nothing, sir; really that is nothing. There's a lot of them knocking about. He was remanded, bail not being forthcoming.

Foreign-made English Watches.—At Bow Street on the 16th ult. before Mr. Bridge, W. Löwenstark, watch dealer and jeweller, of 135, Strand, was charged under the Merchandise Marks Act, 1887, with selling a watch to which a false trade description was applied. Mr. F. Fulton prosecuted on behalf of the London Watchmakers' Trade Association, and explained that the clauses in the Merchandise Marks Act, 1887, relating to watches were inserted solely because the British watchmaker had been almost ruined by the sale in this country of Swiss and other foreign manufactured watches as English goods. In this instance the case of the watch bore the Birmingham Hall-mark, and the movement bore the words, "Compensation balance," whereas the fact was this so-called "compensation balance" was a worthless imitation of the real thing, which was designed to adjust the movement of a watch to the temperature of varying climates. The Birmingham Hall-mark and the words "compensation balance" constituted a false trade description. The whole of the works of the watch were of Swiss make. Edward Lundy proved buying the watch. The shopman showed him that the case bore the Birmingham Hall-mark in four places. Mr. Bridge failed to see that it was a "false trade description" to stamp a foreign-made case, assuming it was foreign, with the Birmingham Hall-mark prior to the passing of the Act. Mr. Fulton pointed out that the Act made it an offence to sell, after the passing of the Act, a watch with the case so marked, apart from the fact that the entire works in this instance were foreign, as an English-made article, without a declaration from the vendor to that effect. Mr. Bridge, however, dismissed the summons. Mr. Stewart, of 200, Strand, was charged with a similar offence. The defendant admitted his guilt, and was fined 40s. Mr. Fulton said in this instance the watch, which was undoubtedly of foreign origin, bore the name and address of the defendant. Mr. Bridge's decision in the first case is likely to be appealed against.

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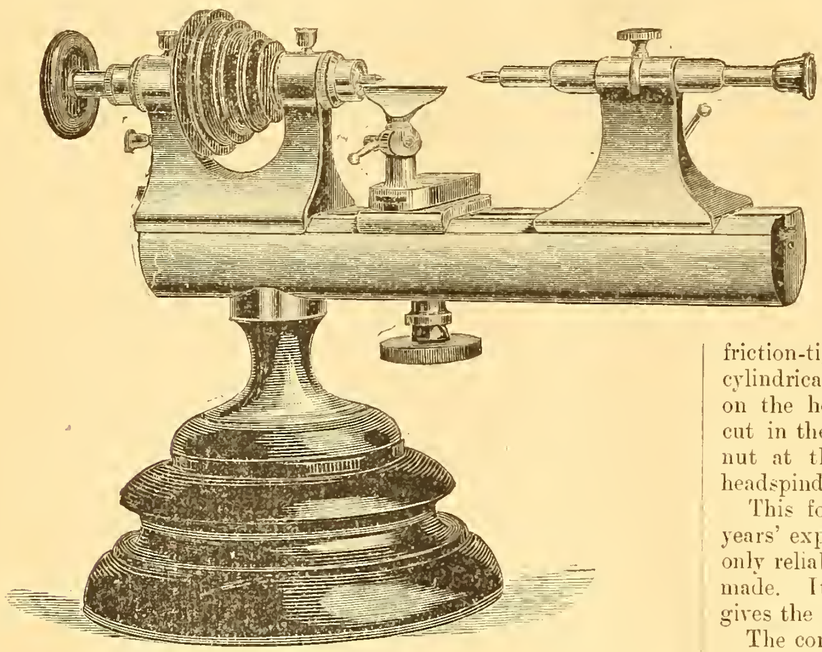
* The paper, with tables referred to appended, can be obtained from the author, Mr. Edward Sang, 31, Mayfield Road, Edinburgh.

Machine Tools for Watchmakers.

It is proposed in the following series to deal with some of the most useful appliances that have been recently brought out for the amelioration of the working watchmaker. Foremost, as a matter of course, come the various new lathes that are at present on the market, and taking these without any regard to the order of their introduction, we shall begin with

THE "MARTIN" LATHE.

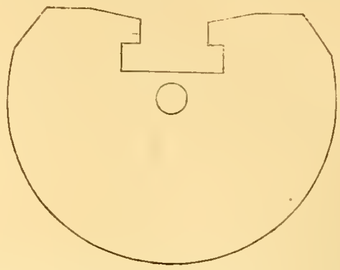
The footwheel and handwheel are gradually superseding the bow for all turning, except, perhaps, the finest pivotting. For this purpose it is not likely that the bow will ever be superseded. Experienced workmen agree that a more accurately cylindrical pivot is produced by the to and fro motion of the bow and polisher than by the lathe and rotary lap of the most accurate construction, and it is due to the feeling that good work could not be produced in any other manner that the introduction of improved tools for turning has been hindered. Employers are now fast awakening to the fact that improved tools are more important factors in the facilitating and cheapening of productions than they were wont to be considered in this country, and, as in America, a watch-jobber stands but little chance of obtaining employment in a good firm if he does not possess a lathe and understand well how to use it. English watchmakers may be expected in the near future to see the advantage of paying more attention to such machine tools as are not only economisers of labour, but will allow of work being produced equal, if not superior to that done by the old processes. Until quite recently the only reliable lathes adapted for the watchmaker's use were the American; the price of these tools, however, placed them beyond the reach of most workmen.



The "Martin" Lathe has been specially designed to supply the want of a reliable tool at a moderate cost, and we are convinced from careful examination and practical experience that it does so most completely. In accuracy, durability and finish it is equal to the productions of the best American makers; while it is much less expensive.

The watchmaker's many and varied requirements have been carefully studied in the design of this lathe, the result being a tool admirably adapted for the purpose; which, with the various accessories supplied with it, will be found capable of executing almost any turning work required.

The "Martin" lathe is similar in design to the American "Whitcomb" lathe, No. $1\frac{1}{2}$, length of bed $9\frac{7}{8}$, height of centre 2 inches. This size has been adopted as the most generally useful; it is large enough for any uprighting required by the watchmaker; while it runs so lightly that it can be used for the smallest pivotting or jewelling.



The bed is the same pattern as is used by the best American makers, and, as will be seen from the drawing and section, is very solid and substantial; a point of great importance in a lathe designed for accurate work. It is supported by a massive turned pillar or base, which is attached to the left-hand end of the bed by a large steel bolt.

This bolt has a screw cut at each end, the upper end being screwed into the bed, the lower end being provided with a wing-nut and washer to secure it to the workboard. This is the most convenient way of fixing the lathe to the workboard, as when not in use the lathe can be pushed back so that the bed is at right angles to the workman, thus saving space on the bench.

The headstock is cast iron, with hard steel collars shrunk into the casting. Both bearings are coned, the front cone having its largest diameter in front and the back cone its largest diameter to the back. The collars are provided with oil-holes and receptacles, and fitted front and back with dust-rings to exclude chips and prevent the oil being thrown off.

The headspindle is hardened cast steel, and is hollow right through. The front cone bearing is solid with the spindle, the back cone is fitted friction-tight on the headspindle, which is ground accurately cylindrical to receive it. The cone is prevented from turning on the headspindle by a pin in the cone fitting into a keyway cut in the headspindle, and it is adjusted to position by a split nut at the back, which is fitted to a fine screw cut on the headspindle.

This form of bearing for lathes has been proved by many years' experience, both in this country and in America, to be the only reliable one, and it is in use in all the best lathes that are made. It runs very lightly, wears equally, and at the same time gives the utmost stability for heavy turning.

The conical mouth of the headspindle, also the cylindrical bore which receives the chucks, are ground out perfectly true after the spindle is in position in its own bearings, so that the chucks are perfectly interchangeable. The chucks are secured to the headspindle by means of the draw-in spindle; this is a hollow steel spindle with a rubber hand-wheel at the back, the front end having a screw-thread cut inside it to suit the chucks. The draw-in spindle is put into the head spindle from the back; the chuck is put into the mouth of the headspindle, and is prevented from turning by a pin in the spindle engaging with a keyway or groove cut in the chuck. When the draw-in spindle is screwed up the chuck is drawn tightly into the mouth of the spindle.

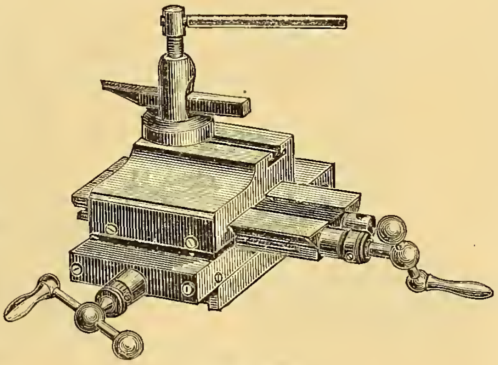
The vulcanite pulley has four different-sized grooves for the belt. It is fixed to the spindle by a screw passing through the pulley, the point entering a hole drilled in the spindle.

A brass dividing plate, with a circle of sixty holes drilled in it, is let into the face of the pulley, and the index-pin is fitted to a hole drilled through the headstock at the back. This enables the workman to divide a circle into any of the following numbers accurately, viz., 2, 3, 4, 5, 6, 10, 12, 15, 30, 60.

The headstock is planed on its under side to fit the bed, and is fixed to it by means of a bolt with a T-head, which fits the slot planed in the bed, the other end of this bolt goes up into the headstock and has a hole drilled through it at right angles. A hole is drilled in the headstock parallel with the bed ; into this is fitted a pin with a lever-handle on the end. The end of this pin is turned down slightly eccentric, and the eccentric portion fits into the hole in the holding-down bolt. If the lever-handle is moved a little to either the right or left it draws up the holding-down bolt, thus firmly locking the headstock to the bed. This method of attaching is far preferable to the screw, as it grips and releases instantly ; the handle is in the most convenient position, and the headstock can be removed from the bed without the bother of taking out the screw.

The tailstock is attached to the bed in the same way as the headstock, except that the lever handle is at the back. The hole to receive the spindle is accurately bored and ground out true. The spindle is made of hardened steel, and is provided with a conical hole in the front to receive the centres and a vulcanite knob at the back.

The hand-rest is fitted to the sliding shoe, the under surface of which is planed to fit the bed of the lathe so that its sides are always at right angles to it. A steel bolt with a T-shaped head passes through the centre of the sliding shoe and is drawn down by a milled nut and washer on the under side of the bed. The washer has a spiral spring inside it ; this causes the rest to move with a slight friction even when the screw is not tight. The under surface of the hand-rest is flat and has a T-slot planed from end to end to suit the projecting head of the bolt on the sliding shoe. The socket for the graver rest or T is split and closed by a screw with a lever handle. The graver rests or T's are steel hardened. A large and a small T are supplied with the lathe, the small one being intended for use with the centring discs in the Universal runner.

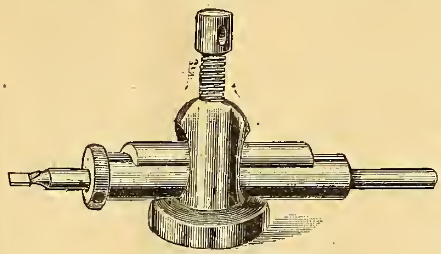


SLIDE REST.

The slide-rest is adapted to the sliding shoe used with the hand-rest. The under surface of the lower side is planed out, leaving two edges projecting; these edges fit accurately and without shake the sides of the sliding shoe. In the centre a T-slot is planed to admit the head of the bolt which fastens it to the bed ; this is the same bolt used with the hand-rest ; so that either rest can be placed in position for use by loosening the one bolt. The upper slide is secured to the lower by a large steel bolt which is tightened by means of an eccentric pin with a lever handle, the slide turns on this bolt as a centre and can be set at any angle required. The front edge is divided to 70° on each side of zero, and there is a mark on the lower side to set it by.

The drawing screws are steel, accurately cut in a screw-cutting lathe ; they have screwed caps to take up any end shake and divided collars. Both screws are covered by the slides so as to be out of the way of dust and chips. The screws are arranged on the English plan, which is generally preferred, *i.e.*, to advance the tool when the screw is turned to the right.

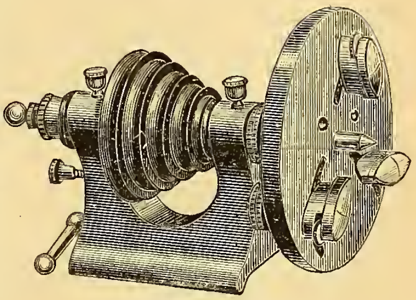
The upper surface of the top slide has a T-slot running parallel with the bed ; to this slot is fitted the toolpost, which is of the pattern commonly known as the Rocker. It consists of a steel bolt having a head turned to fit the slot in the upper slide, the centre of the bolt is cut away to allow the tool to pass through the centre of it, and the top is drilled and tapped to receive a large steel screw with a lever handle to it. Before the toolpost is inserted in the slot, a large steel washer is slipped over the bolt ; this washer has a spherical hollow on its upper side, in which lies a crescent-shaped piece of steel for the tool to rest on. This allows the point of the tool to be raised or lowered a little to adjust it to the centre ; when in position the screw is tightened, firmly fixing the tool. This toolpost can be used at either end of the slot and turned into any required position.



QUILL TOOLPOST.

Another form of holder adapted to hold round steel tools is supplied with the rest, which is found to be very useful for turning out small holes, &c., as the round steel is the most convenient form for the purpose. A toolpost of this description has been in use for many years on the Whitcomb lathe, and by some workmen is preferred, but some find that for heavy work it is not sufficiently rigid. If desired, a toolpost similar to the Hopkins can be supplied.

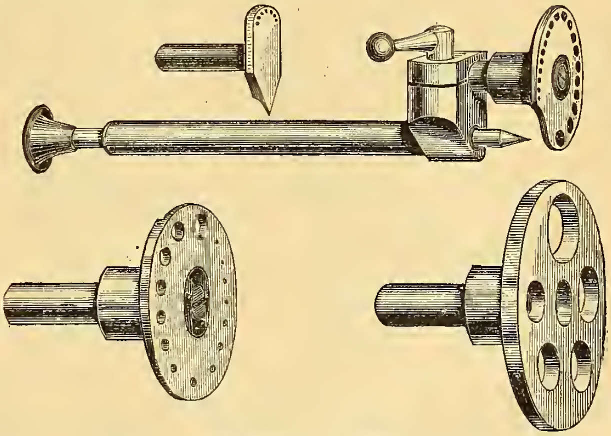
The advantage of a rest fitted to the sliding shoe is that the surfacing slide can be used either in front or behind the bed. Sometimes it is very convenient to use the rest behind the centre, running the lathe the reverse way, and with a rest of this description nearly the whole traverse of the slide can be used behind the bed.



UNIVERSAL HEAD.

The universal head supplied with the Martin lathe has been designed specially to suit the requirements of the watch-repairer ; by a novel arrangement of the slots in the face-plate larger work can be done on this head than on an ordinary 4½-inch Swiss mandrel. It will upright the detent holes of a 22-size watch movement. The casting and conical bearings are similar to those of the headstock. The spindle is of steel, accurately bored to receive the pump-centre, which passes right through the spindle and has a knob at the back to adjust it by. The centre is of large size, hardened and ground true. It has the usual spiral spring to keep it pressed forward and bayonet joint to secure it. The pulley is vulcanite and has a division plate and circle of 60 holes, exactly like the headstock.

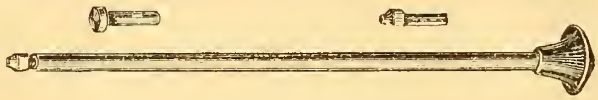
The face-plate is cast-iron shrunk on to the spindle, three sight holes are drilled near the centre, so that the point of the pump-centre can be seen from the back. The dogs are steel with steel screws and nuts, and back nuts. The dogs can be advanced close to the centre to hold very small work.

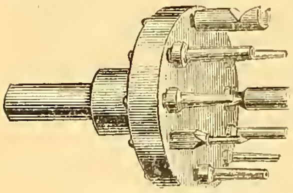


UNIVERSAL RUNNER.

The most accurate way of centring an arbor for drilling when it is necessary to put in a new pivot is to turn a centre with the graver, while the end of the arbor is supported in a cone plate. A most convenient arrangement for this purpose is the Universal Runner as applied to this lathe. The runner consists of a hollow steel tube fitting the hole in the tailstock, having an arm shrunk on the front; this arm has a hole bored and split, and is provided with a screw to close it, into which the cone plates are fitted. A set of three cone plates accompany the runner, containing holes suitable for centring work varying in size from the smallest watch pinion up to an arbor five-sixteenth-of-an-inch in diameter.

To use the tool a hole is selected to suit the work in hand, and the plate inserted in the arm. The hole is adjusted true with the back centre by means of the centring spindle (this is a steel spindle with a conical point, which fits accurately the hole in runner); the point of this spindle is pressed into the hole to be centred, and the screw in the arm is tightened, thus securing the plate firmly. The pinion or arbor to be centred can either be held by one end in a split chuck, or run in a centre fitted to the driver-chuck. The hand-rest, having the small graver rest fixed, is then brought up to the front of the cone plate, and the graver can be used to cut a centre with the greatest ease. If the work is small the drilling spindle which is fitted to the runner is then fitted with the drill-chuck and a drill of a suitable size; the runner is set back a little so as to allow it to run on the drill without touching the cone plate, and the hole drilled. For larger work the drill is fitted to the tailstock spindle.

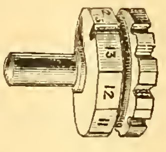

DRILLING SPINDLE


UNIVERSAL CENTRE.

This centre is fitted to the universal runner.

A steel plate with a central stem to fit the hole in the arm of the runner, has eight holes drilled at equal distances round the circumference, each hole having a different pattern centre fitted to it. Anyone of these centres can be brought into position for use by loosening the screw in the arm and centring it from a hole in the back with the centring runner.

A plate provided with female centres round the edge is also fitted to the universal runner.

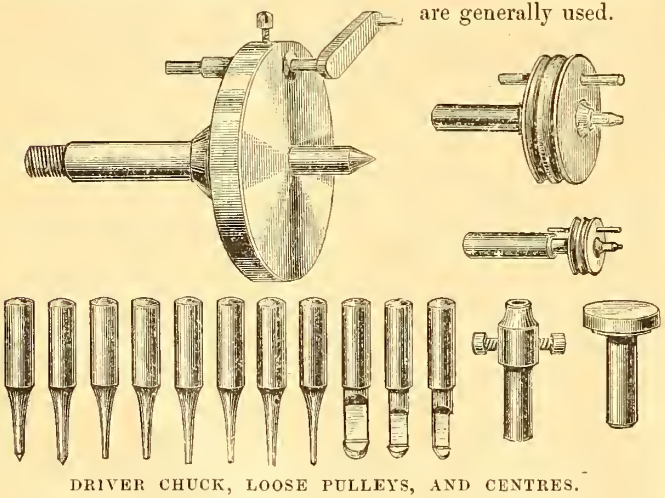

JACOT TOOL.

Another appliance fitted to this runner is the

This tool has fourteen beds of sizes varying from three-tenths of a mill. upwards.

This is suitable for French and carriage clock work; in this class of work, where the pinions are usually rather soft, a better wearing pivot is produced by the burnisher than by polishing in the usual way.

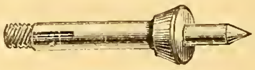
Large and small cement chucks, the usual split chucks for all the running sizes of wire, and split step chucks for holding wheels, barrels, &c., are all found among the accessories supplied with the lathe, and as the last are left soft they can be used for holding most of the parts for which the ordinary cement chucks are generally used.


DRIVER CHUCK, LOOSE PULLEYS, AND CENTRES.

This is a steel chuck having a small face-plate, solid, with it, and provided with an accurately bored taper hole to receive the centres; this hole is a counterpart of the hole in the tailstock spindle, so that the centres, drills, &c., are interchangeable. An adjustable driving pin is fitted to the face-plate to engage with and drive the carriers when turning pieces between centres.

Fitted to this chuck are three centres with loose pulleys of different sizes, for turning small work between *dead* centres as in the turns; each pulley has two grooves, one adapted for the bow, and the other for a small band to be driven from the transmission pulleys at the back. A friction pulley is fitted to the hole in the face-plate, so that the tension of the band can be adjusted to the greatest nicety.

When using these centres the headspindle is prevented from turning by inserting the index point in one of the holes in the division plate.

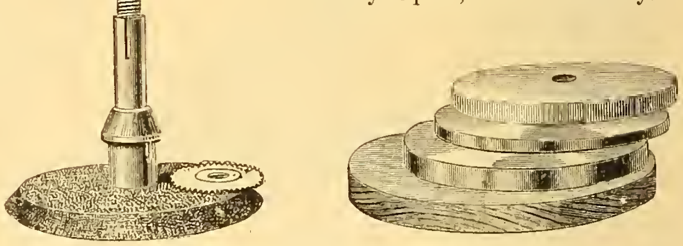

TAPER CHUCK.

This chuck is similar in shape to the split chuck for wire, but without the slots; it is bored out with a taper hole of the same size as the hole in the tailstock spindle, and is intended for holding the drills, sinking tools, &c. The pieces are held by friction, and if properly fitted they hold perfectly, and will always go back true.

This is the most suitable chuck in which to fit Diamond laps for polishing pallets, sharpening drills, &c.

Eight steel centres adapted for use either in the taper chuck or tailstock spindle are provided; these are intended principally for use when drilling up arbors to insert new pivots; they are adapted to support the arbor by the shoulder, allowing the pivot to run free through the hole, thus protecting the pivot from injury during the drilling.

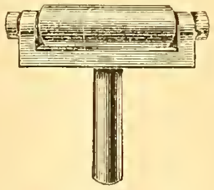
A screw-plate and taps of the best pattern accompanies the lathe, so that the workman can make a chuck of any pattern he may require, without difficulty.

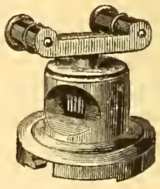

THE SAW, EMERY AND LAPS CHUCK

is a very handy appliance for holding circular saws or cutters. It is a steel chuck projecting about an inch from the head spindle; it is bored and tapped to take a steel screw with a large head. The cutter is gripped between the face of the chuck and the screw.

This chuck, together with a few cutters of various sizes, will be found very handy to the watchmaker for cutting a little out of the middle of a watch case or cap, to free the barrel or chain, or for cutting the slots in a pair of pallets to jewel them, &c.

For shortening and polishing the points of screws three steel lanterns are supplied, which also fit into the steel split chuck; while for larger screws, fusee ends, &c., three large gun-metal lanterns are provided; these lanterns have a chuck with a large male screw to suit them.

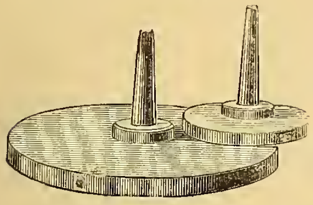

ROLLER T REST.


SQUARING ACCESSORY.

A special rest is supplied for use when filing and polishing screws, &c. This is a T having a hard steel roller running on centres lying parallel with the top; by using this the ordinary T's are saved from getting worn in ruts, and it works more pleasantly.

The squaring accessory is one of the most useful that the workman can have with his lathe, as he often has to produce accurate squares for arbors, punches, etc. By means of this appliance, squares, pentagons, hexagons, or figures with any number of sides, can be quickly and accurately filed, and all risk of spoiling the piece by an accidental slip of the file is avoided.

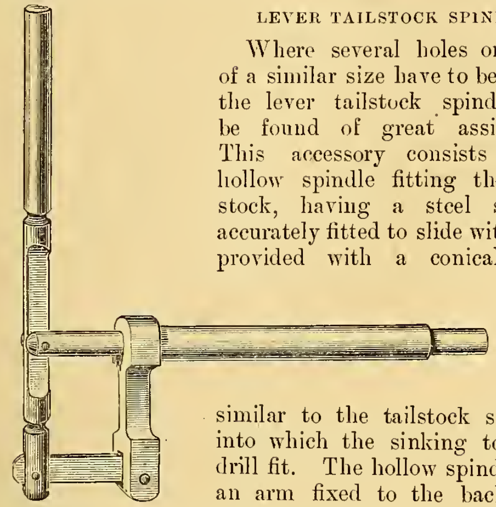
The work is fixed either in the split chuck, or if more convenient, in the cement chuck ; if necessary the tailstock spindle can be used to steady it.



The division plate is used to divide the piece accurately, and the steel rollers prevent the file from penetrating more than a certain depth. With this accessory the production of a true figure is a very simple matter, and takes but little time.

DRILLING PLATES.

Two of these plates are fitted to the tailstock spindle, they are very convenient for supporting work at right angles when drilling holes or cutting sinks, &c.



LEVER TAILSTOCK SPINDLE.

Where several holes or sinks of a similar size have to be made, the lever tailstock spindle will be found of great assistance. This accessory consists of a hollow spindle fitting the tailstock, having a steel spindle accurately fitted to slide within it, provided with a conical hole similar to the tailstock spindle, into which the sinking tools or drill fit. The hollow spindle has an arm fixed to the back end, and is provided with a jointed connecting piece and lever handle to move the central spindle. This arrangement is found to work very rapidly where many holes have to be drilled of a similar pattern.

The Albert Medal.

THE Council of the Society of Arts will proceed to consider the award of the Albert Medal for 1889 early this month, This medal was struck to reward "distinguished merit for promoting Arts, Manufactures, and Commerce," and has been awarded as follows :—

In 1864, to Sir Rowland Hill, K.C.B., F.R.S.
In 1865, to His Imperial Majesty, Napoleon III.
In 1866, to Michael Faraday, D.C.L., F.R.S.
In 1867, to Mr. (afterwards Sir) W. Fothergill Cooke and Professor afterwards Sir) Charles Wheatstone, F.R.S.
In 1868, to Mr. (afterwards Sir) Joseph Whitworth, LL.D., F.R.S.
In 1869, to Baron Justus von Liebig, Associate of the Institute of France, for Memb. R.S., Chevalier of the Legion of Honour, &c.
In 1870, to Vicomte Ferdinand de Lesseps, Member of the Institute of France, Hon. G.C.S.I.
In 1871, to Mr. (afterwards Sir) Henry Cole, K.C.B.
In 1872, to Mr. (now Sir) Henry Bessemer, F.R.S.
In 1873, to Michel Eugène Chevreul, For. Memb. R.S., Member of the Institute of France.
In 1874, to Mr. (afterwards Sir) C. W. Siemens, D.C.L., F.R.S.
In 1875, to Michael Chevalier.
In 1876, to Sir George B. Airy, K.C.B., F.R.S., Astronomer Royal.
In 1877, to Jean Baptist Dumas, For. Memb. R.S., Member of the Institute of France.
In 1878, to Sir William G. Armstrong (now Lord Armstrong), C.B., D.C.L., F.R.S.
In 1879, to Sir William Thomson, LL.D., D.C.L., F.R.S.
In 1880, to James Prescott Joule, LL.D., D.C.L., F.R.S.
In 1881, to August Wilhelm Hofmann, M.D., LL.D., F.R.S., Professor of Chemistry in the University of Berlin.
In 1882, to Louis Pasteur, Member of the Institute of France, For. Memb. R.S.
In 1883, to Sir John Dalton Hooker, K.C.S,I., C.B., M.D., D.C.L., LL.D., F.R.S.
In 1884. to Captain James Buchanan Eads.
In 1885, to Mr. (now Sir) Henry Doulton.
In 1886, to Mr. Samuel Cunliffe Lister.
In 1887, to Her Majesty the Queen.
In 1888, to Professor Hermann Louis Helmholtz.

Serious Charge against a Preston Watchmaker.

ON the 19th ult., before Mr. Raffles, at the Dale Street Court, Preston, Robert Scanlon, watchmaker, of 25, Orchard Street, was charged with receiving a silver lever watch, knowing it to have been stolen, on the 7th of January last.

Mr. Marks conducted the prosecution, and Mr. Blackhurst, solicitor, of Preston, appeared for the defence.

Mr. Marks, in opening the case, said that on December 24 last, Christmas-eve, a gentleman of the name of Henry M'Phillips, grocer, 6, Soho Street, was going along Soho Street, about eleven o'clock, when a man performed on him what was practically a garotte robbery, putting his arm round his neck and snatching his watch from him. The man, who was not known, got away, and he had not been arrested until the present time. Mr. M'Phillips reported the loss of the watch, which had been presented to him, and bore an inscription, with the result that it was advertised in the missing property bill of the detective department. The watch was made by Mr. M'Avoy, watchmaker, of Bootle, and its number at the time it was stolen was 1,858. Nothing was heard of the watch for some time, and then it was discovered under extraordinary circumstances. On the 23rd March last a man named Walter Turner went to the shop of Mr. C. W. Riley, pawnbroker, 313, Stockport Road, Longsight, Manchester, and offered a silver lever watch for pledge. Mr. Riley examined the watch, and found that the number had been tampered with, having been changed from 1858 to 48581, the initial 1 having been changed into a 4, and another 1 added at the end. Although two months had elapsed since he had received the police bills from Liverpool, Mr. Riley, by an extraordinary feat of memory, seemed to think that he knew something about the figures, and turning up his books he found that it corresponded with the missing watch in question. The man Turner was asked to call again, and on being afterwards asked to give an explanation of how he came possessed of it, he produced a receipt, showing that he had purchased it from a labourer named John Slater, on the 22nd January, and had been paying for it by instalments. On the police inquiring, Slater at once said he bought the watch from the defendant Scanlon, a jeweller at Preston, on the 7th January, fourteen days after it had been stolen. Slater also produced a billhead of Scanlon's, which read, "Silver lever watch, M'Avoy, £1 12s. 6d." The accounts given by Turner and Slater had been verified, and thus very recent possession was brought home to Scanlon. Detective Wood went over to Preston and saw Scanlon, who first denied that he knew anything about the watch, but on being shown Slater's invoice in his own handwriting he said he recollected selling it, and added that as he bought 30 or 40 secondhand watches a week he could not say where he got it from. He was then asked to produce his books to show that he bought the number of watches, but he said he kept no books. He (Mr. Marks) submitted that perhaps he kept no record advisedly. In addition to the tampering with the number, the inscription on the inner case had been completely erased, and a new dial had been put in. There was no suggestion that Scanlon was the man who had stolen the watch, and the only question was whether he received the property knowing it to have been stolen. It rested with the defendant to satisfy the Court that he had come lawfully into possession of the watch, and the prosecution had only to prove that the watch was stolen property.

Evidence in support of this statement was then given, after which

Mr. Blackhurst contended there was no case for a jury, and that the evidence showed that the defendant's conduct had been straightforward and *bonâ fide.*

Mr. Raffles remarked that he could not say there was no case, and thereupon Mr. Blackhurst asked that the defendant, who he said was a respectable tradesman and a man of substance be admitted to bail.

Mr. Raffles consented, and the defendant was then committed for trial at the sessions.

A HINT TO BOOTLE.—At the Dale Street Police Court, on Wednesday, before Mr. T. S. Raffles, Thomas Austin Thompson, an assistant to Mr. Geo. Holmes, pawnbroker, 68, Derby Road, was fined 20s. and costs for receiving a pair of boots in pledge from a boy named Jas. Marr, under the age of sixteen years, contrary to section 30 of the Liverpool Improvement Act, 1864. The defendant said there was no such bylaw enforced amongst the neighbouring pawnbrokers in Booote. Mr. Raffles expressed his astonishment that the pawnbrokers had not endeavoured to introduce some clause into the general Act of Parliament for regulating such practices. Liverpool and London had perceived the wisdom of such a course, and had acted upon it. The defendant's shop is a very short distance from the "Borough of Bootle," but happens to be on the Liverpool side of the boundary line, hence the jurisdiction of Mr. Raffles. Uniformity of age would certainly be desirable—unless trading with young children is more so—in Bootle.

American Items.

FROM Cincinnati.—The Spring trade in jewellery, watches, etc., is in most excellent shape in this city. Times are good. Sales are prompt. Money is easy. Now is a good time to sell and to buy. The political excitement caused by the inauguration is over, and business men are happy.

THE Toronto, Ont., retail jewellers are said to have a grievance, which will soon be made a subject for investigation by their association. It is charged that certain wholesale firms are placing watches in the hands of men engaged in other business to be sold—leaving them with grocers, tailors, or shoemakers, who are selling timepieces as readily as goods in their own particular lines. The evil, it is said, is steadily increasing, and is having a bad effect on legitimate dealers in watches and jewellery. It is openly charged that members of the Jobbers' Association are concerned in the offence, and formal complaints will be made to that body.

SEAWEED AS A SUBJECT FOR DESIGNS.—A correspondent of the *Jewelers' Weekly*, writing from Bridgeport, Conn., says that Isaac Holden, foreign correspondent for the Wheeler and Wilson Manufacturing Company, is president of the Bridgeport Scientific Society, and a naturalist of high standing. His particular subject of investigation during the last few years has been seaweed, and he has thousands of specimens, collected by himself, mounted on white cardboard and preserved in an appropriate cabinet. One of Tiffany's designers attended a lecture on seaweed recently delivered by Mr. Holden, at Rutgers College, and was delighted with some beautiful specimens exhibited. The designs were nature's own, and they were so magnificent that the representative of the Tiffanys offered a large price for a complete set. Mr. Holden would not sell them at any price, but agreed to make up a collection and present it to the designer. These plants are in form and structure unlike any others, and when properly mounted show the most pleasing and graceful figures.

AN IMPORTANT BILL.—The Hon. James P. Graham, has introduced into the Legislature of New York, the following important bill regarding the stamping of gold watch cases, which is being strongly supported by the Watch Case Makers' Association of the U. S. The draft of the bill reads as follows, "SECTION I. Any and all persons and corporations engaged in the manufacture and selling of gold watch cases shall not stamp, mark or represent to the public gold watch cases to be of a finer quality or greater carat than the actual fineness of the gold contained in such watch cases. Any person or persons or corporations offending against the provisions of this act, shall be deemed guilty of a misdemeanor, and shall be punished for the first offence by imprisonment not less than thirty days or more than one year, or by a fine of fifty dollars for each and every watch case so marked, stamped, sold, used, disposed of, or trafficked in, or by both such fine and imprisonment, and for each subsequent offence by imprisonment for not less than six months nor more than two years, or by a fine of not less than one hundred dollars for each and every watch case so marked, stamped, sold, used, disposed of, trafficked in, or by both such fine or imprisonment, in the discretion of the magistrate before whom the offence shall be tried. SECTION 2. This act shall take effect immediately." This bill seems good as far as it goes, but as we pointed out in an editorial on this subject some three years ago, it lacks two essential points. 1. Every manufacturer should be forced to stamp his goods with his name and trade mark, in addition to the quality stamp. 2. This law should apply to all jewellery that can be stamped without injury. If these provisions were added to the bill, it would in our humble opinion very quickly do away with the manufacture of debased watch cases and jewellery, and provide a good and sufficient guarantee to the general public, as to the quality of the goods for which they have to pay. The maker's name and quality stamped on the goods would be all the evidence required to establish the fact of who made them, and what quality they were sold for, while the assay office would quickly verify their guarantee.

Applications for Letters Patent.

The following List of Patents has been compiled especially for *The Watchmaker, Jeweller and Silversmith*, by Messrs. W. P. Thompson & Boult, Patent Agents, of 323, High Holborn, London, W.C.; Newcastle Chambers, Angel Row, Nottingham; and 6, Lord Street, Liverpool.

4,810. Charles Ferdinand Veit, London, for "Improvements relating to watch keys." Dated March 19, 1889.

4,877. R. MacNamara and A. Prickett, London, for "Improvements in holders or stands for the support of watches and other articles." Dated March 20, 1889.

4,939. E. T. Hughes, a communication from L. Flaum, Bohemia, for "Improvements in means for fastening brooches and other similar articles." Dated March 21. 1889.

5,084. Alfred J. Boult, 323, High Holborn, London, a communication from René Pouchard, France, for "Improvements in electric clocks with synchronising mechanism." (Complete specification). Dated March 23, 1889.

5,122. L. E. de Hoven and C. Page, London, for "Improvements relating to collar studs, solitaires, and like fastenings." Dated March 25. 1889.

5,161. T. S. McInnes, Glasgow, for "Improvements in the construction of metal cases for timepieces, &c." Dated March 26, 1889.

5,262. O. Kreuzer and E. Kreuzer, London, for "An improved method of arranging alarums in connection with clocks." Dated March 27, 1889.

5,282. A. H. Gladwin, London, for "An electric time indicator, with or without calendar." Dated March 27, 1889.

5,313. W. F. Turnbull and E. J. Turnbull, Birmingham, for "Improvements in the manufacture of jet, imitation jet, or bog oak bracelets." Dated March 28. 1889.

5,401. W. Hughes, Birmingham, for "A double pipe, one inside the other, to be made in gold, silver, or any other metals or substances." Dated March 29, 1889.

5,529. E. de Pass, a communication from The Fabrique d'Horlogerie de Fontainemeton, Switzerland, for "Improvements in watches." Dated April 1, 1889.

5,625. H. Warren, Stamford, for "Improvements in detachable bow for watches and other appliances." Dated April 2, 1889.

5,652. W. D. Davis, London, for "Improvements in clocks." (Complete specification.) Dated April 2, 1889.

5,716. O. Fleischauer, London, for "A new or improved double locking spring sliding gate ring or double holder suitable for watch charms and other purposes." Dated April 3, 1889.

5,766. C. Barbezat-Baillot, London, for "Improvements in repeating watches." Dated April 4, 1889.

5,892. P. Steinmann, London, for "Improved method of reproducing designs or patterns of jewellery and other articles." Dated April 6, 1889.

5,901. W. P. Thompson, 6, Lord Street, Liverpool, a communication from J. B. Brewster, United States, for "Improvements in amalgamating apparatus for separating precious metals from the various substances in which they are found." Dated April 6, 1889.

6,023. C. T. J. Vautin, London, for "An improved process for the amalgamation of gold or other metals capable of amalgamation." Dated April 8, 1889.

6,091. M. Settle, Liverpool, for "Improvements in mechanism for preventing damage to the rest of the watchwork, in case of the mainspring breaking in going barrel watches, and other timepieces or spring propelled mechanism." Dated April 9, 1889.

6,283. A. L. Wharton, London, for "Improved means for attaching rings or bows to the pendants or turrets of keyless watches, and to analogous tubular objects." Dated April 12, 1889.

5,976. A. Leyland, London, for "An improved automatic electric alarm clock." Dated April 8, 1889.

6,404. J. Morson, Durham, for "An improved watch protector." Dated April 15, 1889.

6,512. J. South, London, for "Improvements in or relating to illuminated clocks." Dated April 16, 1889.

6,520. W. P. Thompson, a communication from Günther and L. Hoppe, Germany, for "Improvements in or relating to electrical motors for clocks and similar apparatus." Dated April 16, 1889.

6,564. G. E. Lancelott, Birmingham, for "Improvements in sleeve links." Dated April 17, 1889.

6,637. J. Hawley, junior, Birmingham, for "Improved safety mechanism for centre pinion clocks and watches." Dated April 18, 1889.

6,669. L. J. Smith, London, for "Improved clock cases for hot climates, &c., and damp or exposed positions." Dated April 19, 1889.

Recent American Patents.

Alarm Clock. A. Bannatyne (assignor to the Waterbury Clock Company)	399,725
Bracelet. A. Luthy	400,573
Burnishing Machine. G. B. Kelley	399,669
Card for Buttons or Studs. C. G. Bloomer	399,824
Clock. W. D. Lavies	400,753
Clock Case. A. D. Tyrril	399,097
Electric Alarm Clock. S. Kahan	398,896
Eye Shade. T. H. Harrison	399,892
Fastening for Watch Bows. F. G. Faxon	299,861
Imitation Gem. S. Grossiord	400,450
Jewellery Case. C. F. Domann	399,603
Lathe Tool. J. Whatley	398,918
Method of Manufacturing Screws and Bolts by Electricity. Elihu Thomson	398,912
Method of Graduating Thermometers. H. Schulze-Berge	398,851
Method of Forming Rings. J. B. Bowden	400,541
Mirror Attachment for Telescopic Glasses. A. Janzon	400,571
Opera or Marine Glass. Wm. Mack	399,542
Opera Glass Holder. Wm. Mack	399,543
Oven Thermometer. C. Julier and J. O. Robinson	400,573
Penholder. L. Holzworth	399,043
Repeating Clock. A. Bannatyne (assignor to the Waterbury Clock Company)	399,647
Self-winding Electric Clock. F. W. Brainerd	399,128
Spectacle Lens. A. Morck, jun.	400,783
Spring Bending Machine. J. N. Rice	399,160
Timepiece Dial. C. Bickford	400,734
Thermometer Case. C. J. Tagliabul	400,717
Watch Case Pendant. F. G. Faxon	398,957
Watch Case Bow. J. H. Cooper	399,840
Watch Case. C. K. Giles	399,606
Watchmakers' and Jewellers' Pliers. J. Daniels	399,655
Watch Regulator. C. Teske	398,987

A printed copy of the specifications and drawing of any patent in the American list, also of any American patent issued since 1866, will be furnished from this office for 2s. 6d. In ordering, please state the number and date of the patent required, and remit to J. Truslove, Office of *The Watchmaker, Jeweller and Silversmith*, 7, St. Paul's Churchyard, E.C.

Gazette.

Partnerships Dissolved.

Pearce, Son, and Charlesworth, Sheffield, cutlery manufacturers. W. and F. Terry, Manchester, jewellers. C. D. Allen and J. Thompson (trading as Charles Allen), Brighton, jewellers. Williams and Hughes, Prescot, watch movement manufacturers. Dawson and Franklin, Coventry, nickel platers. E. Beirne and W. H. C. Biden, Stoke-upon-Trent, pawnbrokers. Gilliam and Co., Serle Street, Lincoln's Inn Fields, silversmiths, so far as regards W. Gilliam, Lee and Elkington, Stafford, pawnbrokers. Wayham and Watt, Hatton Garden, scientific instrument makers. J. U. Morton and A. W. Bauer, Oxford Street, cutlers. Capel, Young and Co., Wall Street, Ball's Pond Road, metal stampers. R. E. Newton and Co., Birmingham, electro-plate manufacturers. W. Briggs and Co., Sheffield, Britannia-metal manufacturers. Hyde and Barber, Streatham, pawnbrokers.

THE BANKRUPTCY ACT, 1883.

Receiving Orders.

To surrender in London.—Chalfont, Henry Ernest, Theberton Street, Islington, diamond setter.

To surrender in the Country.—Best, Geo. C. H., Cardiff, watchmaker. Ingram, David C., Penzance, jeweller.

Public Examinations.

J. I. Tumpowski, Cardiff, jeweller, May 14, at 10.30. G. C. H. Best, Cardiff, watchmaker. May 14, at 10.30. D. C. Ingram, Penzance, jeweller, May 11, at 11.30.

Adjudications.

J. Tuck, St. James' Street, Clerkenwell, jeweller. H. E. Chalfont, Theberton Street, Islington, diamond setter. D. C. Ingram, Penzance, Cornwall, jeweller. H. C. Stickler, Frome, watchmaker. A. G. T. Winter, Southampton, pawnbroker

Notices of Dividends.

In London.—J. S. Levy (trading as J. S. Levy and Co.), Barbican, City, and Paris, importer of clocks, 1s., first. any Wednesday, Seear, Hasluck, and Co.. 17, Holborn Viaduct. A. Jack, Cheltenham, jeweller, 6d., second and final, Seear, Hasluck and Co., 17, Holborn Viaduct.

In the Country.—G. Cornell, Maidstone, watchmaker, 4s. 2d., first and final, 36, Hatton Garden. E. Allsopp, Nottingham, watchmaker, 2s. 4½d., first and final, Official Receiver, Nottingham.

The Deeds of Arrangement Act, 1887.

Berwick.

Garland, Harry Saxty, 27, High Street, and Castle Terrace, Berwick-on-Tweed. watchmaker and jeweller. Trustee, J. H. Peace, 83, Colmore Row. Birmingham., C.A., and another. Unsecured Liabilities, £1,636 9s. 5d.. Estimated Net Assets, £735 12s. 3d. Deed of Composition dated April 3, 1889; filed April 9, 1889.

Cumberland.

Topping, Dauiel, South William Street, Workington, watchmaker. Trustee, G. G. Poppleton, Temple Row, Birmingham, P.A. Unsecured Liabilities, £365 6s. 3d. Estimated Net Assets, £166. Creditors fully secured, £14. Deed of Composition dated April 17, 1889; filed April 18, 1889.

Lancaster.

Dodge, W. and M., 21, Market Place, Manchester, jewellers, goldsmiths, and silversmiths. Partners, William Dodge, of Birchpolygon, Rusholme, and Morten Dodge, 15, York Place, Manchester (trading as). Inspector, H. Griffiths, jun., 131, Warston Lane, Birmingham, and others. Unsecured Liabilities, £7,052 16s. 3d. Estimated Net Assets, £8,370 17s. 1d. Deed of Inspectorship and Letter of License dated March 28, 1889; filed April 4, 1889.

Middlesex and Surrey.

North, Robert Edwin. 57*a*, Hatton Garden, E,C.. and 38, Sisters Avenue, Clapham Common, S.W., diamond cutter. Trustee, Lawrence Hasluck, 17. Holborn Viaduct, London, E.C., C.A. Unsecured Liabilities, £11,142. Estimated Net Assets, £4,181 14s. 10d. Composition, 6s. 8d. in the £; 3s. 6d. within seven days from execution of Deed, and the balance of 3s. 2 1. by instalments, Debtor agreeing to pay Trustee half his future earnings to enable him to pay such balance. Deed of Composition dated April 8, 1889; filed April 15, 1889.

Warwick and Stafford.

Basnett, Samuel, 29, Augusta Street, Birmingham, and Arnold House, Wellington Road, Handsworth, jeweller. Trustee, E. M. Sharp, Colmore Row, Birmingham, C.A. Unsecured Liabilities £2,078 17s. 1d. Estimated Net Assets, £482 3s. 10d. Creditors fully secured, £4,646 9s. 9d. Deed of Composition dated April 1, 1889; filed April 5, 1889.

Warwick.

Woolf, Isaac, 27*a*, Great Hampton Street, Birmingham, watch material dealer and jeweller. Trustee, W. G. Fowkes, 83, Colmore Row, Birmingham, C.A. Unsecured Liabilities, £234 16s. 1d. Estimated Net Assets, £89 18s. 5d. Deed of Composition dated March 21, 1889; filed March 28, 1889.

BANKRUPTCY.

Re Henry Charles Stickler, 16, Palmer Street, Frome, watchmaker and jeweller. At the meeting of the creditors of this debtor, held last month in the Bristol Bankruptcy Court before the Official Receiver the statement of affairs showed liabilities amounting to £894 15s. 11d. to unsecured creditors; £24 10s. to creditors fully secured, the estimated value of the securities being £57 2s. 6d.; £37 due to partly-secured creditors, the value of the securities being £12; the total liabilities expected to rank being £919 15s. 11d. The assets amounted to £620 8s. 11d., of which £432 was for stock; the deficiency being £311 11s. "A false report that he was a bankrupt, and pressure by creditors in consequence," was the alleged cause of failure. The Official Receiver's observations were as follows:—"This debtor commenced business as a watchmaker and jeweller in 1879, with a capital of £20. The books kept are not complete, though they may have been such as would suffice for recording daily sales, &c. The debtor never took stock, and never prepared any statement of his affairs. At the date of the petition an execution had been levied, and the high bailiff was in possession. The debtor pledged several watches and articles of jewellery, and states that the goods so pledged have not been paid for; the surplus set out in the statement represents his estimate of the value after the repayment of the loans. The business has been kept going for the benefit of the estate, and in order that the 'winding' connection should not be lost, but it will probably be found that the greater part of it has been transferred to other tradesmen. It is not the debtor's intention to make any proposal, either by composition or scheme of arrangement, and he has been adjudicated a bankrupt on his own petition." Mr. G. G. Poppleton, of Birmingham was appointed trustee, with a committee of inspection.

COLONIAL AND INDIAN EDITION.

The
Watchmaker, Jeweller
and
Silversmith.

Publishers: TRUSLOVE & SHIRLEY.

7, ST. PAUL'S CHURCHYARD,
LONDON, E.C.

MAY, 1889.

To the Wholesale Trade

THE Publishers of the *Watchmaker, Jeweller and Silversmith* beg to announce that in accordance with their previously expressed purpose, and in consequence of the good results which have accrued to both the journal and its supporters from the former editions that have been Specially Circulated among Colonial Buyers, they propose continuing these extra issues at regular intervals.

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IN BANKRUPTCY.

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Buyers' Guide.

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The Watchmaker, Jeweller & Silversmith.

EDITED BY D. GLASGOW, JUN.

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The Watchmaker, Jeweller and Silversmith.

A Monthly Journal devoted to the interests of Watchmakers, Jewellers, Silversmiths, Opticians and kindred traders.

Correspondence.—Correspondence is invited on all matters of interest to the trade. Correspondents will please give their full address in each communication, not necessarily for publication, but as a guarantee of good faith.

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LONDON, E.C.

Cheques and Postal Orders to be made payable to J. TRUSLOVE.

WRITING about the Paris Exhibition, a Paris correspondent of a London contemporary says that the Anglo-Saxon exhibitors in Paris have taken a step which cannot fail to give annoyance to thousands of French visitors to the Exhibition. Sunday in Paris is the day of all days when everyone flocks to the Champ de Mars. Busy professional men, shopkeepers, artisans, and labourers, all choose the only day in the week when they have a holiday to go to the Great Exhibition. But the English and American exhibitors have passed a resolution that they will stay away from the Exhibition themselves; and last Sunday, in many cases, they covered over their exhibits with cloth.

"Such conduct as this, continues the writer, is grossly uncivil. These exhibitors, when they applied for permission to exhibit, knew that the Exhibition would be open on Sunday, and therefore, if they thought Sunday opening so utterly damnable, they should have abstained altogether from coming to Paris. Having come, they should abide by the maxim, 'Do in Rome as Rome does.' Moreover, the method they have adopted is deliberately offensive. That the English and American attendants at the exhibits should ask for leave of absence for themselves for one day a week is intelligible and commendable, but there is no reason why glass cases containing soap or bottles of perfume, or ladies' dresses, or gentlemen's boots should be covered up. The things will not run away of their own accord, and there are plenty of French policemen about to see that no one steals them."

We entirely concur in the above and foregoing remarks of this complainer, and sincerely trust that if those exhibitors who represent the trades with which we are concerned find their staffs unequal to the task of working the extra day of the week, they will find a means of avoiding doing that which is and will undoubtedly be looked upon by our rather sensitive neighbours as a pharisaical and ultra-snobbish act, and one that will, to say the least, neither be conducive to the smoothing of their already highly-offended susceptibilities, nor to business.

The English official refusal to recognise the Exhibition has already, as everyone knows, greatly irritated the French people, although they have done their best to avoid showing any feeling on the subject as unworthy of notice. The men of sense, who, by taking the matter up and exhibiting on their own responsibility, have partially allayed the irritation, will find the good effects of their previous action entirely nullified unless they thoroughly identify themselves for the time being with the people they are now among. We, at all events, give our particular traders credit for having more sense and being better men of business than to participate in or approve of any such movement or agreement as the one complained of.

GENERAL NOTES

The moving spirit of the Spanish Exhibition is said to be Mr., or Senor, Losada, watch and clock maker, of Regent Street.

At Norwich last month, William Chas. Hands, of Thorpe Hamlet, jeweller, was committed for trial on a charge of illegally pawning articles of jewellery at various dates of last year.

Mr. Marlow, watchmaker, of King Street, Coventry, is now lying in a critical condition from the effects of a trap accident which happened at Kenilworth last month, in which Mrs. Marlow was also injured.

Henry Hincks, a West End jeweller, was sentenced last month to 18 months' hard labour for stealing a bracelet of the value of £130 from Messrs. Lewis and Allenby, of Regent Street.

Gilbert Eaton, aged 57, who resided at 11, Armitage Street, Lower Broughton Road, Manchester, committed suicide last month, by taking cyanide of potassium. There was no evidence to show the state of his mind at the time.

During the earlier part of the residence in England of the new sculptor-baronet, Sir Joseph Boehm, R.A., he used to work as modeller of plate, and so forth, for Messrs. Hunt and Roskell, the silversmiths.

The Use of the word "Patent."—In the House of Commons last month, Mr. Jackson said that the attention of the Customs authorities would be called to the practice of using the word "patent" on foreign as well as English goods, thereby inducing the belief that they are of English origin.

Horology at the Paris Exhibition.—Horology at the Paris Exhibition is represented by 280 French, and 147 Swiss exhibitors, while ten and three English and American firms only are respectively exhibiting. The success of the French section is almost entirely due to the zeal and devotion of Mons. A. H. Rodanet, president of the Paris Syndical Chamber of Horology.

Visitors to Paris.—During the period of the Paris Exhibition holders of tickets available for not more than a fortnight will only be required to pay half the amount of the ordinary passenger dues on landing and embarking at Boulogne and Calais. Excursionists holding tickets available for one day only will pay one franc, instead of 1f. 75c. if they travel by special packets.

Important discoveries of stolen jewellery were made by the police last month in a house in President Street, St. Luke's, and a man named Harris is in custody on various charges of receiving the same. Various London firms have identified watches, &c., as having been stolen from them, and the find is expected to lead to important results in the future detection of this species of fraud.

London Watchmakers' Association.—At the general quarterly meeting of the association last month, it was stated that Messrs. Kendal and Dent had sent a cheque for ten guineas as an annual subscription to the association, but that the committee had declined to accept it, and had returned the cheque. Thereupon Mr. Kendal had forwarded the like amount as a donation, and this had been accepted.

Peculiarity of French Auctions.—There are two species of articles that never fail to sell well at provincial auctions in France. These are mirrors and clocks. Time goes so slowly in the country that it is necessary for the dwellers therein to know what o'clock it is. This creates a heavy demand for clocks. In the other the provincial ladies have plenty of leisure to study their own reflections; hence the extraordinary demand for looking glasses and timepieces, and if all the rest of the lot goes for a mere song, these articles command a fair price.

Ring Thieves.—To counter the ring thieves who abound in the States, and who are usually well dressed and respectable in appearance, a New York jeweller has hit upon the following device: Through each row of rings is run a steel rod; these rods are attached to an iron frame with hinges at one end and a lock at the other. As it is impossible to refuse to place a tray of rings before the customer, when the latter wishes to look at the rings the rack is handed out. When necessary, any ring can be taken off by unlocking the frame.

Jonnie West, the famous cricketer, whose benefit (North v. South) was to have taken place last month at Lord's, and who has been one of the ground staff at Lord's since 1869, and for many years umpire on the same ground, hails from Yorkshire. He is close on 44 years of age. West is a Sheffield knife hafter by trade, which calling he follows all through the winter, and has been with one firm 23 years. He bears on his left hand, with which he bowls, the callus on the palm against which the file works, the dints on the thumb, and the marks where the file has chipped out bits of his hand.

The Lancashire Watch Factory.—With respect to the erection of the first block in connection with the factory of the Lancashire Watch Company at Prescot (says the *Prescot Reporter*), work has commenced in real earnestness, and the contractor (Mr. Taylor, of Littleborough) predicts that the building, now it is fairly commenced, will rise like a mushroom. Early last month Mr. Jas. Hewitt laid the first brick, after which a strong staff of bricklayers started upon the job, which will, barring unforeseen circumstances, be completed by August at the latest. So far as the business of the company itself is concerned, we believe the employees have plenty of orders before them for execution.

The Duty on Silver Plate.—It seems strange, says the *Bombay Gazette*, that while our government is doing its best to foster technical education and to improve the technical skill of Indian artificers, the Government at home should stand out for a duty which yields them a little and which discourages an interesting and elegant handicraft. The taste for Indian silverware will grow, but it will not be easy to send much into England while a pedantically exacting standard of fineness is set up for the exclusion of a good portion of the work of our Indian silver workers. Give the trade a fair field, and with the increasing cheapness of silver and the increasing appreciation in which Indian silverware is beginning to be held, a substantial trade ought to grow up.

At the Thames Police Court last month, Mr. Kurman, jeweller, of Commercial Road, asked Mr. Lushington's advice under the following circumstances:—He carried on a large business in repairing, and 25 watches, 20 clocks, and a large quantity of jewellery which were brought to him to repair within the last eighteen months or two years had never been called for. He wanted to know if he could sell them. Mr. Lushington replied he could give the applicant no authority to dispose of the articles in question. He offered the suggestion, however, that the applicant might give notice that if the articles were not called for within a certain period he should sell them to defray the cost of the repairs. At the same time he would have to keep the balance, if any, for the rightful owners if they should come forward to claim their property.

How to get to Paris.—The London, Chatham, and Dover Railway Company have arranged with the Northern of France Company and International Sleeping Car Company to commence the new Club Train Services between London and Paris on June 3, on which day the new harbour works at Calais will be opened by the President of the French Republic. This service will leave Victoria Station at 4.15 p.m. every weekday, on and from that date, with the exception of two or three days in the month, which will be duly announced. The London, Chatham, and Dover Company's new steamer (the new Calais-Douvres) will run in connection with this service. Paris will be reached at 11.45 p.m. A similar service will return from Paris on every day except Saturdays, leaving Paris at 4 p.m., and arriving at Victoria at 11.30 p.m.

Pawning and Bankruptcy.—The Board of Trade will shortly introduce into the House of Commons, a Bill to make an important amendment in the laws affecting bankrupts. Under the provisions of the Bankruptcy Act, 1883, a bankrupt who files his own petition cannot be punished if he has pledged goods which he has obtained on credit from the manufacturer. This provision has been taken advantage of by dishonest traders to a considerable extent, instances having come to the knowledge of the authorities of men who for years had pledged goods immediately they have received them from the makers, and then escaped the legal consequences of such practices by filing their petition in bankruptcy. The practice is reported to be on the increase, and has aroused much attention lately in Chambers of Commerce and legal circles that representations were made to the Board of Trade, and the Board has consequently resolved upon legislative action.

Bill to Amend the Bankruptcy Act.—A bill has been introduced into the House of Commons to amend the Law of Bankruptcy, backed by Sir A. K. Rollit, Colonel Hill, Mr. Woodall, Mr. F. Fullon, Mr. Labouchere, Mr. C. H. Wilson, and Mr. Gully. The Act, which is not intended to be applicable to Scotland or Ireland, is to come into operation on January 1st next. Cap. 4 amends 46 and 47 Victoria, as does cap. 5, which deals with the amount necessary to be owed to petitioning creditors, and reduces the sum from £50 to £20. Cap. 6 gives facilities for inspection of the debtor's statement of affairs; while there are also provisions for further powers for creditors to accept, and the Court to approve, composition or arrangement by the debtor. There are also proposals concerning a bankrupt's discharge; and certain misdemeanours, such as hazardous speculation or unjustifiable extravagance, undue preference, or fraudulent breach of trust, are made criminal and punishable. Section 11 of the Debtors' Act, 1869, is amended in favour of the creditors.

Anemometers.—In an action in the Queen's Bench Division of the High Court of Justice on April 26 last, Mr. J. Hicks, the well-known instrument maker of Hatton Garden, sued the patentee of an anemometer named Gordon for £307, being the price of 50 of the machines at £7 15s. each. The defence, which was limited to the clockwork and did not apply to the anemometer itself, was that the machines were not made according to order, and were wholly unfit for the purpose for which they were supplied, to the knowledge of the plaintiff. Professor Stokes, who as expert had examined the machines, mentioned some "blemishes," as he called them, in the clockwork, none of which he considered serious; however, the principal one being "that the mechanical power employed was not sufficient to carry the clockwork through a whole week," so that the machine had to be wound up between whiles. Lord Coleridge, as the result of the Professor's report said that the defendant would not be justified in rejecting the machines, and in the end it was agreed that there should be judgment for the plaintiff for £300.

Tipping in Business.—The extent of this evil is widespread, and does not only consist of a *douceur* given by the seller to one or more servants of the buyer, but it leads to a species of dishonesty of the very worst kind. This is countenanced, a correspondent of the *Manchester Guardian* is sorry to say, by some people who, one would think, were honourable men from the social and philanthropic position they assume in our midst. The buyer, who must (to a large extent) rely on his servants, is robbed by one, two, or all of three different methods. In the first place, by direct payment to his *employés*. If the seller can afford to give a commission to the servant of the buyer, he can, of course, afford to reduce the price of the material sold to that extent, and still get the same profit on his goods. Surely the servant has no moral or legal right to be paid by the seller, especially when the money comes indirectly from the master's pocket, with whom he has already arranged the amount of his remuneration. Secondly, it is not uncommon for the "tipster" to pay to the *employé* of the purchaser a fixed commission of so much per pound or ton on all goods purchased by the master. It then becomes the interest of the servant to make his master buy as much as possible of any article from the "tipster," which is more or less recklessly used, poured away, or thrown directly into the sewer or river. Thirdly, the *employé* by various devices or tricks contrives to make his master purchase material far above its mercantile value, the "tipster" and the *employés* of the buyer dividing the excess of profit between them. Such methods of trading must soon exhaust the profits of any business and sooner or later bring it to ruin. All this, as every business man will readily admit, is unhappily too true; but that any such philosophising as the foregoing will soon effect much of a change in the prevailing system is rather to be hoped for than expected.

The Diamond Market.—The *Amsterdam* market, which had been very quiet on account of the holidays, showed signs of improvement towards the end of the month. Russian and French buyers present have increased the demand and factories are a little busier, although what sellers consider remunerative prices are still unobtainable. *Rough* is in demand, but on account of the price, sells with difficulty. The *Antwerp* trade, it is perhaps needless to say, is under the same influences as that of *Amsterdam*, the one market governing the other more or less.

The *Paris* trade is reviving. There is more demand for finished goods both among foreign buyers and local dealers, New York, as usual, being the chief mart.

High prices and, consequently, moderate sales have been the order of the day in the London market. Current goods are in good demand, but coloured and yellows are not enquired for. Nothing but the high prices held out for has prevented larger business transactions; many of the numerous foreigners returning empty-handed, to await a more favourable state of the market.

Metals.—*Silver*—Market quiet at 42½d. per oz. for *Bars*; Mexican dollars, nominal. The other markets are generally steady, the quotations being: *Copper*—Chili bars, good ordinary brands and G. M. B.'s, cash, £39 2s. 6d. to £39 10s.; *Tin*—Fine foreign, cash, Straits, £93 to £93 10s.; Australian, £93 7s. 6d. to £93 17s. 6d.; *Lead*—Spanish soft, £12 12s. 6d. to £12 15s.; English, £12 17s. 6d. to £13; *Spelter*—Ordinary brands, £18; special, £18 2s. 6d.; English soft V. & S, £18 10., Swansea. *Quicksilver*—Importers' price, £8 10s.; second hands, £8 5s.

Board of Trade Returns.

THE clocks and parts thereof imported during April reached the value of £40,491, in comparison with £38,903 for the same month of last year, and £34,968 for that of 1887. The following shows the sources of the supply:—

April	1887.	1888.	1889.
From France	£17,159	£16,334	£15,636
,, United States ...	£8,126	£7,091	£8,129
,, other countries ...	£9,683	£15,478	£16,726

The four months of this year give a record of £141,279 against £147,444 for the same period of 1888, and £122,827 for 1887.

The watches and parts thereof imported in April valued £68,389, and for the April of last year the value was £55,526. In the same month of 1887 the value was £58,286. The four months of this year give a total value of £231,817 for watches imported, in comparison with £175,137 for the same months of last year, and £231,789 for those of 1887.

The plate and plated and gilt-wares exported in April valued £36,962, against £26,982 in the April of 1888, and £22,108 of that of 1887. This year for its first four months shows a record of £124,340. In the same period of last year the value was £107,733, and in that of 1887 £91,598.

The total imports in April of every kind of produce reached the value of £37,225,549, in comparison with £32,098,693 for the April of 1888, and £31,149,925 for that of 1887. The four months of this year show a record of £143,751,283 against £128,978,878 for the same period of last year, and £123,423,071 for the first four months of 1887.

The exports for April reached a total of £19,569,647—an increase on the same month of last year, when the value was £17,775,474, but in the April of 1887 it was only £16,411,662. The four months of this year give a total value of exports of £80,039,699, in comparison with £74,398,875 for the same period of last year, and £70,477,613 during the same months of 1887.

TRADE NOTES

THE "Castle Link" has been so well received that the patentee has decided to make it in Hall-marked gold and silver in addition to the cheaper forms. We would call the attention of those buyers who are not already acquainted with this patent to its extreme simplicity and effectiveness. A trial of the link enables us to confirm the claims made by Mr. Jones for his patent, viz., that it is instantly inserted or removed, is self-adjusting, does not crease the cuff or wear the button hole, and has no springs or complicated parts to get out of order.

MR. W. H. BROWN, of Great Hampton Street, Birmingham, sends us his new illustrated catalogue of watch materials, tools, &c.; watch and jewellery repairs; watches and clocks, &c. Upwards of 100 illustrations of the newest tools and appliances for the use of watchmakers and jewellers, and a well arranged price-list make this catalogue one of the most interesting and useful to the trade we have seen.

MR. JOHN TAYLOR, manufacturing optician, formerly of 49, but now of 54, Tenby Street, North, Birmingham, has taken into partnership his cousin, Mr. H. L. Taylor, and the business will be continued in the larger premises now occupied by the firm under the style of J. & H. Taylor.

IN consequence of the old firm of Messrs. J. Muirhead & Sons, 90, Buchanan Street, Glasgow, giving up business, their stock of watches, clocks and jewellery was auctioned last month: the sale, which was a most exhaustive one, comprised 1150 lots. The removal of the firm from the city, says the *North British Mail*, severs another link with the past history of Buchanan Street, as 70 years have come and gone since they started business, and during that time have maintained a high reputation for the quality and chaste design of their watches and jewellery of all kinds.

MR. SOPHRON SIEGER, 360, Argyle Street, Glasgow, has taken out a patent for "a new and improved chronometer detent" which the patentee claims to be superior to the ordinary spring detent, inasmuch as it is stronger, simpler and cheaper, and can be applied to any kind of watch having an ordinary ratchet-tooth escape-wheel. The escapement complete is a modification of the pivoted detent escapement as at present made by French and Swiss makers, and which was invented and perfected by P. LeRoy and Berthoud respectively; the principal point of difference is in the form of the recovering spring. Although the pivoted-detent has never been regarded with favour here, it has given excellent results in the hands of our neighbours, and, as the respective merits of the two escapements still remain to a great extent an open question, the introduction of Mr. Sieger's patent may lead to further experiments being made with a view of deciding the argument.

THE LANCASHIRE WATCH CO.—The foundation stone of the first of the three factories which the company contemplate erecting, was laid at Prescot on the 20th ult., in the presence of a large and enthusiastic gathering of sympathisers with the scheme. The building is to be erected near the Warrington Road, on an estate of 15 acres of land purchased by the company, and intended to be in future leased or sold to the employees desiring to build their own houses. It is to cost £10,000, and to accommodate 550 hands. It is, however, only part of a larger factory designed for 3000 employees, which, in addition to supplying the demand for hand-made watches, will be equipped with a full complement of automatic and other machine tools of the most advanced and approved type, capable, in all, of turning out 500 English lever watches per day, or 150,000 per annum. This factory will occupy several acres of land. The building at present to be erected will occupy a site 286 feet long by 89½ feet wide, and will consist entirely of one storey. Only the offices will be of an ornamental character externally. The principal workroom will be 180 feet long and 87 feet wide, and the general arrangements as to plan, warming and ventilation are of the most improved kind. The motive power will be transmitted through the building by shafting, and a noteworthy feature is that a complete system of piping will be fitted up for automatically conveying oil to all the machines throughout the premises. In the principal workroom will be twelve lines of benches, running from end to end, and providing for 532 workers, so placed as to face the west light. When completed the buildings will consist of three additional factories of the same size, running parallel to the present one, and connected with a four-storey building of ornamental character, which will form the principal front. The architects are Messrs. Stott & Sons, Manchester and Oldham, and the contractors, Messrs. E. Taylor & Co., Littleborough.

MRS. CORNWALLIS WEST will wear, when presented at Court, a diamond tiara designed and made specially by Messrs. Ford and Wright, of Clerkenwell Road, E.C. It consists entirely of maiden-hair fern which encircles the head like a coronet. It represents two sprays standing in the centre in front and graduating off towards the back. Each half can be used as a long spray from the shoulder downward, or the whole tiara is so constructed as to form six separate brooches of graduating sizes. Its price is 350 guineas.

THE same firm has manufactured for E. H. Carbutt, Esq. a diamond collet necklet weighing 120 carats, the price being 2,000 guineas, the centre stone of which is 8 carats, the next 7 carats, each then 5½ carats, and so on to 1½ carats. All the stones are set in invisible claw settings, and both design and workmanship reflect the highest credit on the manufacturers.

BIRMINGHAM NEWS

From Our Correspondent.

The approach of a general holiday appears to be the signal for a certain amount of stagnation in the jewellery trade of late years. "Nothing about till after Whitsuntide" has been frequently repeated as an explanation of the comparatively quiet state of trade during May. It is a noticeable fact that a depression always occurs during the interval between Easter and Whitsuntide, and the present occasion has been no exception to the rule. I have never heard any very intelligent explanation why this should be the case, and we appear to have settled down into a state of resignation to the inevitable, and look forward to a summer trade, which, I suppose, practically means catering for the autumn shipping. The Cape seems to be the "coming event" in the shipping line, and a few orders for that locality have been already executed of such a nature as to hold out expectations of further lines. Orders for the home seaside trade have been rather few and far between. A few decent lines in silver goods for the Isle of Man summer season, wanted by an early date, have caused a few instances of over-work and pressure to get in to time, but there has been no general rush for the particular line of seaside orders. The die-sinkers report a fair amount of work, which means that manufacturers are pushing new designs in order to secure orders. The general branch of stamping and piercing has proved very flat all through this quarter.

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The goldsmiths are reading the signs of the times and discern evidences of the fact that wrought goldwork is again coming to the front. I have heard a number of expressions of opinion to this effect, and hope that the prophecy is correct, as it will give some scope for art work, and some encouragement to rising young workmen of taste and ability, of whom a considerable number have sprung up of late years. In looking through an old directory of Birmingham, dated 1830, I was interested to find that there were, at that time, only two *jewellers' stampers* in Birmingham, although there were quite a number of jewellers spread all over the town; this fact, I think, speaks volumes as to the difference in the class of work produced at that time; those have been grand days for the goldsmith proper. Manufacturers who are in possession of a good stock of topaz goods or loose stones, will be pleased to hear of a coming demand for the same; there are strong evidences of a fashion setting in, in favour of this old favourite, and quotations are already rising in consequence. Parcels of stones that up till lately have been sold at 25s. per oz., are now being offered at 90s., and any offers under this amount have at present been refused. I have been favoured with a view of some new brooches with topaz centres and wrought gold borders of very tasty designs and good workmanship, and these are to be among the leading summer fashions. Ladies of taste should be able to make good use of topaz jewellery, as the stone naturally repeats the colour of the sunshine and adds beauty and brilliancy to comparatively plain toilets.

* * *

The very enterprising firm of G. E. Walton & Co., Limited, Hylton Street, Birmingham, have just concluded the purchase of the stock and business of William West, Caroline Street, the patentee of the famous solitaire known as West's Patent. Messrs. G. E. Walton & Co. will be the only makers of this particular line, which has up till now been the best solitaire in the market; they hold all the patent rights of the same, and are also makers of several other solitaires and fasteners for cuffs with patent actions.

* * *

The Jewellers' and Silversmiths' Association is fast increasing in numerical strength, and this of course means increased funds. It now boasts of a total of 144 members, 15 new members having been elected at the last meeting. The officers of the Association are:—Chairman, Mr. Chas. Green; Vice-Chairman, Mr. J. M. Banks; Treasurer, Mr. W. J. Ginder; Hon. Sec., Mr. J. W. Tonks; Auditor, Mr. A. G. McKewan; Secretary, Allen Edwards, Chartered Accountant.

* * *

A considerable amount of regret and sympathy are expressed from all sides upon the unfortunate accident which happened to Mr. Henry Griffiths, Jun., of the firm of Henry Griffiths & Son, Warstone Lane, Birmingham, and Chairman of The English Watch Company, Villa Street, Birmingham, who was thrown from his dog cart and sustained a compound fracture of the ankle which will take some time to get right under the most skilful treatment.

* * *

The success of white alloys in contradistinction to silver-plated wares is already very pronounced, and the new showrooms and offices of the "Berndorf Metal Works," at the corner of Regent Street and Frederick Street, Birmingham, are an outcome of the same; the building is large and important in appearance and is evidently designed for the business; the firm are manufacturers of a great variety of metal goods, rolled metal, wire and tubing, goods in white alloy and nickel, and should be able to command a very extensive trade. The manager is Mr. B. S. Spittle.

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Messrs. Twine & Moulson, manufacturing jewellers, Tenby Street, Birmingham, have dissolved partnership; the official notice to this effect was issued to the trade on May 4. The business will be continued as Twine and Moulson, and will be really the property of Mr. F. Moulson, with Mr. Twine as manager.

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Mr. G. E. Cramp, manufacturing jeweller, has removed from 22 to 99, Vyse Street, on the opposite side of the way.

* * *

Messrs. John Spiers & Co., jewel case manufacturers, have removed from Ruby Buildings, Warstone Lane, to more commodious premises, No. 45, Frederick Street. This firm have gone largely into the shipping trade of late years, and I understand are capable of taking some large lines in their class of goods.

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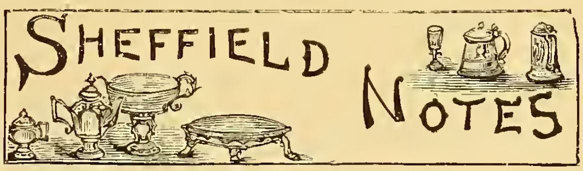
As the Hall-marking department of the trade has been to the front of late it may interest some of your readers to know that there has been an assay office in Birmingham since 1773 A.D. There are seven other assay offices in the country for Hall-marking purposes.



SHEFFIELD NOTES

From Our Correspondent.

"Save me from my friends," has been the aspiration of more than one man or institution in the world's history. It may well now be the fervent prayer of the silver plate manufacturers of Sheffield, for no more questionable service was ever rendered to them than the question put by Mr. Howard Vincent in the House of Commons to the Chancellor of the Exchequer. Mr. Vincent, like Mr. Watherston, has a hobby which he trots out on the slightest provocation, and which he calls "Fair Trade." There is no earthly reason why Mr. Vincent should speak in the name of the silversmiths of Sheffield; but if he chooses to do so, he might refrain from identifying them by implication with this economic heresy. This, however, is what he did the other night, under the guise of a question to Mr. Goschen as to his intentions in the matter of the plate duties and Hall-marking. Mr. Vincent is, moreover, labouring under the delusion that silversmiths are at present protected by a tariff on all foreign-made goods, and that they are agitating against the abolition of such tariff. Really the Member for the central division of the borough has need to be informed as to the *status quo* before he troubles his head about legislation of a prospective character.

THE usual spring sales of ivory at Liverpool, which took place on the May 7, fully bore out the evil prognostications indulged in after the London sales last month. Ivory is getting scarcer and scarcer, while the demand for it, in the present state of trade, is getting keener. Prices ruled from £1 to £2 higher even than at the London sales in the previous week, and at that figure two parcels of between three or four tons were withdrawn. Altogether about 22 tons were sold. The ivory cutters of Sheffield are on the point of issuing a revised list of prices, showing advances of from 2½ to 10 per cent., which will come into operation at once.

A STUDENT of the Sheffield School of Art, Mr. Tom Barker, has just received notification that he has been awarded the second prize in the Society of Arts competition for the best "cup or sugar basin in beaten silver, chased or otherwise." About the practical utility of such competitions there can be no question. Were they to become more general we might in time come across a decent looking "foot-ball challenge cup," or even ultimately expect to see a well-designed piece of racing plate produced by an English manufacturer. That these things are possible, no one who knows much of our art-workmen doubt; but whether it is the philistinism of manufacturers or the stupidity of the general public which stands in the way, their realisation seems likely to be deferred till the Greek Kalends. Manufacturers in a general way may be trusted to produce what pays, and one can hardly expect them to spend money in educating an unappreciative public, but this renders it all the more desirable that some of the public bodies in Sheffield should emulate the action of the London Society of Arts, and do something to raise the public taste.

ANOTHER old student of the School of Art has achieved a notable success this month. Mr. Charles Green, well known throughout the Sheffield trades as a designer and modeller, has had a work of his accepted at the Royal Academy, and has been well placed in the central sculpture room. I am the more pleased to hear of this success because Mr. Green is one who throughout his whole career has allowed commercial success to take care of itself and gone in for art pure and simple. His work is a bust of the Mayor (Mr. Alderman Clegg), which was shown at the exhibition of the Sheffield Society of Artists last summer. It may be Mr. Green's gain, but it certainly is Sheffield's loss, that he should spend some of his time in London, and so I am both sorry and glad to hear that he has set up a studio there as well as in Sheffield.

AFTER all that has been said and written on the subject of the proposed abolition of the plate duties, one is continually hearing the action taken by the Sheffield manufacturers misrepresented by people at a distance. They are spoken of as men who by their inordinate greed are striving to hinder a much needed alteration in the law. It certainly shows courage or something else on Mr. Watherston's part to occupy half a column in the local press as he did the other day, to establish this. Mr. Goschen says he is prepared to give £50,000 as drawback—the manufacturers say this is not sufficient, therefore they are hindering beneficent legislation. But this begs the whole question—it assumes that the proposed change is a much needed one. Now the manufacturers are quite willing to agree to the abstract proposition that silver plate should not be taxed, and were there no tax on at present they would most assuredly not vote for its imposition. But that is not the point. What they have to consider in contemplating any proposal for a change is, whether or no the game is worth the candle. This question after due deliberation they have answered in the negative. As one remarked to me the other day, "The duty is on and where is the harm? The people who buy silver can well afford to pay it, and the public exchequer is so much the richer. Were the duty off tomorrow I might turn out a little more silver, but it would be at the expense of my trade in plated goods. The volume of my trade in the end would be the same. If the Chancellor of the Exchequer will repay me what I have paid on all this (pointing to his show cases) I don't care a brass farthing whether the duty is on or off, but as things are I'm not going to bother my head about it." This manufacturer may be taken as typical of the whole lot, and I leave it to the reader to judge whether the position he takes up can be fairly described as factious opposition to a much needed reform.

THE general trade of the town continues prosperous. The price of coal tends upwards, and the colliers are going in for another 10 per cent. Fears are expressed that this course, if persisted in, will seriously check the prosperity of the heavy trades which are handicapped quite enough owing to the inland position of the town, and consequent cost of carriage to the seaboard. The movement, however, is really part of the general feeling of confidence which prevails, and to that extent is a good sign. The silver trade is busy as far as concerns those firms who make the best class of goods, but for the cheaper class of goods the demand has slackened. This again may be taken as a healthy symptom. Nothing was more depressing during the recent evil times than to contemplate the underselling which prevailed in every branch of industry. The firms who went in for low-priced rubbish were the people who did the business. That there is now a re-action against this state of things shows that no permanent harm has been done, a point upon which many people at one time had serious misgivings.

ONE result of the spirit of hopefulness which prevails in commercial circles, is the movement in favour of the erection of a Town Hall. This is an adjunct to municipal government of which Sheffield at present is destitute—the building known by that name being in reality only a police office. The Town Council meets in a room purchased from a now defunct Mechanic's Institution, and the Boro' Accountant's department is housed in one of the slums. Other of the municipal offices are scattered about in different parts of the town. All this in a town of 300,000 inhabitants is matter for boasting, so that it is not to be wondered at if some opposition is developing itself. The other day a "Town's Meeting," summoned by indignantly worded posters, protesting against such proposed "shameful waste of the ratepayers' money" was held in the Temperance Hall. As only some 50 or 60 ratepayers thought it worth their while to attend, it is more than probable that in due course we shall be the happy possessors of a respectable building in which to conduct the town's business.

THE action "Turton and Sons (Limited) *v.* Turton and others, is at last disposed of. These latter had sought to restrain the defendants from carrying on business under the same name as themselves—a very reasonable course to take, but for the fact that it was also the defendant's own name and exactly described his firm. Nevertheless, Mr. Justice North decided last month that the defendants could not carry on business under their own name, because it might injure the plaintiffs, who, as a business house, were first in the field. This decision was appealed against, and the case came before the Master of the Rolls, who has reversed the decision of the court below, and granted costs on the higher scale.

ALLEGED THEFT OF A WATCH AT CARDIFF.—At Cardiff Police Court last month, Llewellyn Richards, who carried on business as a watchmaker in Bute Road, Cardiff, was committed for trial at the quarter session on the charge of stealing a gold watch, of the value of £20, belonging to Harriet Morgan, and which was entrusted to him to repair last November. The police found the watch pledged at the shop of Mr. Shibko, pawnbroker, Roath, where, it was alleged, the prisoner had pledged it for £5.

Midland Jottings.

By K. P.

DURING the Exposition Universelle in 1867, twenty-three Birmingham artisans were sent to Paris for a three weeks' visit and to report, each in their special trade, upon the Exhibition itself. This was accomplished by means of voluntary subscription and was entirely successful. Among the several branches of industry represented in the report was "Jewellery with diamonds and precious stones," by W. G. Deeley: "Jewellery and Gilt Toys," by James Planepin; "Electro-Plate," by H. J. Fellows; "Die Sinking," by W. Moore: and "Design," by Frank J. Jackson. In 1874 a deputation was also sent to the Exhibition at Vienna, which included Messrs. W. C. Aitken, J. W. Tonks, T. C. Barnes, S. Wall Richards, and Charles Hibbs. There is no manner of doubt as to the great use of such deputations, and this is quite recognised in the City. An attempt has been made to get the City Council to send out such another deputation to the present Exhibition at Paris, but, as was to be expected, the idea could not be entertained. Neither would it be proper that it should be considered even. It is not in the province of a City Council to do such a thing; but there should be no hesitation on the part of the promoters of the scheme in organising a subscription list for the purpose, as has been done before. The scheme should most certainly be carried through, and that by means of voluntary contributions. We hope, before writing next month, the thing will be done.

Have we heard the last of the Messrs. Bishton and Fletcher case? Something or other seems to turn up each month. This month Messrs. Payton and Co. have advanced a claim for £107 against the senior partner's private estate, which however, the trustee of the estate refused to admit, claiming that it was a debt of the firm and should be paid by the partners jointly. The matter was taken to the County Court, and Judge Chalmers having taken time to consider, as the case was a test one, has now given his decision for the trustee. Messrs. Payton's agreement was, that what took place after the dissolution was practically a novation by which Bishton became solely responsible for the joint debts of both partners. The Judge, however, pointed out that by the terms of the composition-deed this view was entirely impossible, as it was plain from the terms that the creditors look to both Bishton and Fletcher in case the deed fell through, and therefore they must be considered joint creditors and not rank as private creditors of Bishton.

This case was lost through the omission of a formality. Had Fletcher been made a bankrupt, there would no longer have been a joint estate; but as it is there is theoretically, at all events, still that little difficulty. The case therefore now stands thus. The joint creditors will not be able to come on the private estate of Bishton, until Bishton's private creditors are satisfied. When this satisfaction comes about: when this desirable climax is realised; we would ask, how much will there be of the private estate of Bishton, for the joint creditors of Messrs. Bishton and Fletcher to share between them?

The arrangements in connection with the Electrical and Industrial Exhibition go on apace. Nearly the whole of the space at disposal has been allotted, and if all goes well the doors will be opened early in August. Bingley Hall is large enough and convenient enough for an excellent show, and there is no doubt but that the committee will do their level best to utilise every available corner and make the best use of the space. Of course Electricity applied to arts and manufactures, and to public and private purposes will play the first fiddle, but Mr. T. C. Sharp, the Secretary, informs us that the Industries represented by this journal will by no means be neglected. The list of exhibitors includes the names of well-known firms in the jewellery and silversmiths' trades, and we believe watchmaking and the optical trades will not be unrepresented. We are not able this month to publish the list of exhibitors in these trades, but in our next issue we hope to be able to give this information.

While speaking of Electric Lighting, it is on the cards that a Company with £50,000 capital will be floated to light by electricity a large and important area of "The New City." Messrs. Chamberlain and Hookham's application to the Board of Trade is now receiving the consideration of the City Council. It is to be hoped that if the scheme proves successful that a better result will be obtained than has been the case at Leamington, from which town very dismal reports of the Electric Light are received.

Mr. J. M. Williams is now representing Messrs. T. & J. Bragg, of Birmingham, in London, where his address is 264, Regent Street, W. Mr. Williams' presence in town may account in some measure for the number of special articles the firm are called on to manufacture. The only chance of doing business just at the present time is by producing some special design which is only supplied to the one buyer. The old patterns are not looked at at all, and even three or four samples of the same pattern article are disliked, so great seems the craze for the unique.

We are very pleased to observe this state of things, for there is no doubt that it is far more artistic than the old method which produced one pattern by the gross. The work for the designers will become much more plentiful, and with the development, there might result a return to the art of past times when stamping machines were unknown and when each workman was an artist in the precious metals. In these days, when but little jewellery is worn, this would seem to be quite right and proper in the higher branches of the trade. Of course for the cheaper stuff it will be quite impossible, for artistic work in its highest sense can only be had by offering in return that sufficiency of the world's goods which to the artist, like other men, is essential.

Mr. J. W. Tonks, of Messrs. Bragg's, reports a pause in the jewellery trade. The sale of Messrs. Bishton and Fletcher's stock is probably one of the causes which bring this about. Many country shopkeepers were present at the sale and bought goods in—for them—large quantities at low prices. So that in consequence their small orders are now missing.

This firm who some time ago made for the Corporation of Middleton a mayoral chain and badge, are now making a smaller badge of very charming design, which is to be worn by the mayor on occasions when the more elaborate badge and chain is not required.

There are indications of a transition in style in the trade. People seem to have tired of the Queen Anne and the Japanese, and the fashion seems to be tending towards the style of the Empire, or even a little earlier than this. It will be an undoubted change if this should turn out to be correct and there are few styles probably which are more dainty or charming than those which immediately preceded the Empire, and the classical simplicity of the Empire itself. There seems to be a tendency in dress too, towards the short waists and shoulder straps of the Empire costume, and should this prevail to any extent, there is no doubt but that the jewellery which will accord with this pretty costume will also be worn.

The influence of the Paris Exhibition will be largely felt as regards fashions, although it may be some time before it is felt here. It is unwise to prophecy, for very often the newest things take the longest time to travel. For instance, we may cite the case of the fichu brooches which were so much the rage a short time ago. These practically took two years to cross the Channel and become acclimatised in England. This is a special instance, however, for it is not every fashion which takes so long as this to travel from Paris.

That was a very neat way of recovering stolen jewellery, which is said to have operated in a London drawing room the other evening. A very valuable diamond earring was missed; a search was made, but without result, when a gentleman volunteered to find it by magic. He went from the room and returned with a coloured glass vessel filled with some liquid. Each one present was to dip a finger into the liquid, and whoever had the jewel, his or her finger would become crimson. No one's finger turned crimson, but the earring was found in the vessel after each one of the guests had dipped a finger into the liquid. No one thought of holding any suspicion as to the magical powers of the gentleman who accomplished this wonderful feat.

In the House of Commons Mr. Howell asked the Chancellor of the Exchequer if he would permit British manufacturers, in view of the Paris Exhibition, to enter upon equal terms with Foreign makers for the manufacture of silver and gold plate, by relaxing the laws as to duties and compulsory assay. The Chancellor replied that he could not see his way to make changes so great until he had received a very strong and general expression from the trade. Shortly after Mr. Howard Vincent asked of the Chancellor of the Exchequer if he had received strong evidence from the trade that Hall-marking for silver should continue compulsory, and received the following reply: "I have received evidence that there is a strong feeling on the part of at least a portion of the silver trade that Hall-marking should continue compulsory."

In connection with the question of Hall-marking, we find in the spectacle trade so much rubbish, said to be "Gold Frame spectacles," has been thrown on the market that the larger makers are now having all their best goods Hall-marked. Their customers are not at all averse to paying the small extra cost entailed, if they know that the goods they buy are really what they are made out to be.

While talking of spectacles we would observe that the old haphazard fashion of buying them is rapidly dying out. People are beginning to comprehend the simple fact that the eye is the most delicate organ of the body, and that anything in connection with it should be conducted with the greatest care. We have in abundance specialists for the teeth, for the throat, and for the ear, but ophthalmic surgeons are rare, and properly qualified opticians perhaps even rarer.

However, this state of things now shows signs of improvement, and the necessity for proper sight testing before ordering spectacles is becoming more widely recognised. People, instead of going to a store where spectacles happen to be kept and carrying away with them two bits of glass through which they can without too much difficulty make out with a fair degree of distinctness the objects which surround them, now go to a duly qualified optician, or else to an ophthalmic surgeon, who will see that all the necessary measurements are made and a pair of spectacles constructed so that they shall be wholly useful and not at all injurious to the person who wears them. Gross neglect of the eye is probably the most prodigal of all neglect.

A contemporary is inviting discussion on a matter of some importance to the jeweller, silversmith and watchmaker. The subject is as to whether it would be advisable for ironmongers to embark upon the sale of such wares as jewellery, fancy goods, clocks and bronzes, among many others in a long list. Many ironmongers do already trade in these articles, but the end required of this discussion is whether they should add as a regular branch of their business such things as the above mentioned. This is a question of some importance to retail jewellers and silversmiths, and the result of the discussion by the ironmongers should be looked for with interest. We are not inclined to think that any further extension of the ironmonger's stock goods would be advantageous, and for such articles as clocks of the better class, and delicate gold work, barometers and such like, the close proximity of pots, kettles, and doorscrapers would not tend to keep their condition and general appearance what it should be if the purchaser wishes to buy a new article.

Messrs. Alldridge & Sons, of Regent Parade, Birmingham, are just now engaged on some very fine plate chests in oak and walnut for abroad. For the home market they are engaged producing some nice things in spirit frames of wood, with electroplate mountings.

American Finger Rings.

It is claimed by travellers, who have given attention to the study of artistic and useful articles for personal adornment, says the *Chicago Times*, that the United States is coming to be specially noted for the excellent quality of rings now manufactured. This high position has only been obtained by diligent research and study by our designers and manufacturers. The jewellery manufactured in France is very light, neat and pretty, but the fact that Parisian jewellers are required by law to make nothing less than eighteen carats fine is responsible for the flimsiness of the work turned out. The English jeweller, on the other hand, works in a fashion diametrically opposed to that of his French brother, using the heavy, bulky patterns. The more gold is utilised the more favour it finds in the sight of the English public. The New York maker has profited by the faults, if faults they may be termed, of both the English and French workmen, by adopting a happy medium, in manufacturing rings in such a manner as to not make use of such a large quantity of gold, and by so doing he is enabled to give the stone with which the ring is garnished a finer setting, thereby making it instead of the metal the principal object to be desired. The manufacturer who uses only a sufficient quantity of gold, enough to secure the safety of the stone, finds his goods more in demand than those who adopt either the French or English fashion.

The styles of rings have changed wonderfully during the last few years. Formerly corals, cameos and garnets found favour with the fair sex, but nowadays diamonds are the most popular stones with fashionable people. Many rings are made of a combination of rubies and diamonds, while turquoise and opal are in general use. Opal was considered up to a few years ago a sign of ill omen, except for persons born during the month of October; but a reaction has set in, and it is steadily gaining in favour. The designs worn now are often original with the wearer, and any one can have a ring manufactured, no matter how peculiar or intricate the design, provided he is able to pay for his originality, which often comes high.

The most popular ring for gentlemen is the initial, the top of which is usually made of black onyx, the letter being fastened securely to it, and is oftentimes thickly studded with rose diamonds. These rings are now made as cheaply as the ordinary cameo, and have altogether taken the place of that once fashionable stone. Ladies' low-priced rings are generally combinations of garnets and pearls, turquoise and rose diamonds, all prettily shaded. Moonstone, now coming into prominence, is a high-priced article. The United States uses five-eighths of the diamond product of the world. The best stones and the most artistic lapidary work are in constant demand, no other description finding a sale. Sapphire is already fashionable, and promises not to decrease in public favour. There are pink, yellow, green, as well as blue sapphires, each of which has its admirers, and all of which are gaining in popularity.

The Duty on Plate.

In the House of Commons last month, Mr. Howell asked the Chancellor of the Exchequer whether, having regard to the recommendations of the Royal Commission on gold and silver with respect to the abolition of the duties upon gold and silver plate, and the injurious effects of those duties upon the several trades connected with this branch of British industry, the Government will undertake, at the earliest opportunity, to abolish those duties. Whether he will explain to the House the exact position of the question of drawback in relation thereto; how much is demanded by the trade; precedents there are for the quantity of drawbacks in the case of other goods, such as paper, bricks, glass, &c., when relieved from taxation. And, whether he is aware that a sum of about £50,000, or equal to one year's duty, would satisfy the claims of manufacturers of and dealers in silver plate, and that no drawback can be claimed on gold goods, seeing that the duty is almost entirely derived from wedding rings.

The Chancellor of the Exchequer, in reply, said that question dealt with two distinct subjects—the duty on gold plate and the duty on silver plate. The Royal Commission on gold and silver did not touch on the gold plate duty at all. It only recommended the repeal of the duty on silver plate, and based its recommendation on the interest, not of the home industries, but of India. He could not accept any proposal for the repeal of the gold plate duty; but he might say at once that he should be glad to see his way to repeal the silver plate duty. He had, however, fully explained to the House that the state of the revenue would not justify his taking any steps in this direction at present, and he could give no pledge on the subject. On the question of drawback, in the event of abolition of duty no definite understanding existed between the Government and the trade, and no demand had been formulated by the trade in general on the subject. The precedents quoted by hon. members showed that the similar drawbacks in the past cost the country a very considerable sum. He should be very glad to learn that £50,000 would satisfy the silver plate trade. No drawback could be claimed on any articles, whether of gold or silver, if they were unstamped.

Taxation of Silver Plate.

Writing to the *Times*, Mr. W. J. Goode, of South Audley Street, is responsible for the following, which by those whose motto is *audi alteram partem* is worthy of consideration: I can fully endorse all that Mr. Watherson has said in his letter of Thursday last. I have just returned from Paris, and, on inspecting the allotments of space in the British section in the Exhibition, I was not surprised to find that our leading manufacturers were conspicuous by their absence, for the experience of Messrs. Elkington and others in 1878 was certainly not encouraging.

The blighting and depressing effect of the duty on silver has in a great measure been the cause of the total want of originality and progress generally made in the silver work of this country during the last few years, but there is a secondary cause hardly less important.

Why does old silver work command such high prices at Christie's—sometimes over £20 per ounce, as lately shown? It is partly owing to its excellent taste and originality, but principally through the merit of its excellent workmanship. When our manufacturers cease to employ the stamped-out and machine-made work so largely made at present, then will be the time for them to claim and merit the council medals which we have so well earned in the manufacture of porcelain, pottery, and glass: for in these products we are universally acknowledged to be pre-eminent, equally as regards taste and workmanship.

I recollect when a boy, after receiving my education abroad, especially in the arts and manufactures (Cellini being pre-eminent in the precious metals), I visited the chief seats of manufacture in this country, and on inquiring for the best designs I was shown a centre-piece, composed of a giraffe and a palm tree, with the remark that it was a fine specimen of taste and manufacture! I laughed at the time, but with few exceptions, I have since found but little progress.

When I walk down Oxford Street and Regent Street and compare what I see in the shop windows with the work done in the time of Queens Elizabeth and Anne, and of George II. and III., I feel ashamed of our country not doing better. The same remark refers to plated goods, for in my experience I have found that an old Sheffield-plated coffee-pot and candlestick formed of copper and silver plates well welded together, will outlast four times over the modern stamped and machine-made electro work.

The effect of the removal of the duty on work of general utility was well shown some 40 years since, when I perfectly recollect that manufacturers in glass were afraid to attempt anything of an unusual character, for the excise officer was always at their elbow. Our magnificent show of glass at the approaching Paris Exhibition would have been impossible had the obnoxious duty been still in existence.

Not a Novation.

In the Birmingham County Court last month, Judge Chalmers gave judgment in the motion made by Messrs. Payton & Co., jewellers, against Mr. E. M. Sharp, as trustee in the bankruptcy of Alfred Bishton, jewellers' factor. Mr. Sharp refused to admit a debt of £107 contracted by Messrs. Payton with Bishton and his former partner, Fletcher, and his Honour was asked to decide—through this test case—whether the joint creditors of Bishton and Fletcher were entitled to prove against the separate estate of the debtor Bishton in competition with his separate creditors. His Honour said that *primâ facie* of course they were not, but it was urged by Mr. Parfitt that what took place after the dissolution of the partnership amounted to a novation, by virtue of which Bishton alone became responsible for the joint debts. Bishton and Fletcher dissolved partnership in July, 1887, the firm at that time not being able to meet its liabilities in full. It was verbally agreed between Bishton and Fletcher that Bishton should take over all the assets and all the liabilities of the firm, and this arrangement, though never carried out by any assignment, was no doubt acted upon between the parties; and he thought the effect of the arrangement had been to convert the partnership assets into the separate assets of Bishton. The partners or ex-partners could not meet their liabilities, and in August, 1887—that was shortly after the dissolution—a meeting of their creditors was called, in order to offer a composition. At that meeting the nature of the arrangement between the debtors was explained to the creditors, and the creditors thereupon resolved to accept a composition of 12s. in the pound. That composition had not been paid according to its terms. Mr. Parfitt, for Messrs. Payton, relied on what took place at the meeting as effecting a novation under which the joint creditors of Bishton and Fletcher became the separate creditors of Bishton alone, but the terms of the composition-deed were conclusive against that contention. It was clear from the deed that the creditors who were parties to it looked both to Bishton and Fletcher for the payment of the composition, and that they expressly reserved their rights both against Bishton and Fletcher in case the composition should fall through. No doubt the creditors were satisfied with the arrangement made between Bishton and Fletcher as between themselves, but it was clear that the creditors did not make themselves parties to that arrangement. The partnership had already been dissolved, and there was no reason why the creditors should give up their rights against Fletcher. He did not see any conflict between Mr. Pointon's evidence and the terms of the deed; but if there were any such conflict the terms of the deed must prevail. The result was that the creditors who were parties to the deed were still the joint creditors of Bishton and Fletcher. This *primâ facie* prevented them proving against Bishton's separate estate until his separate creditors had been satisfied. But then a further point was taken. It was said that by virtue of the arrangement between Fletcher and Bishton there was no longer any joint-estate, and that therefore the joint creditors were entitled to come in with the separate creditors. That presumably would be the case if Fletcher had been made a bankrupt, but he had not. The fact that he might be unable to pay his debts was immaterial, as was shown by the case of *ex parte* Janson. Therefore he thought that in the present case the applicants and other creditors who were parties to the deed of August, 1887, were not entitled to prove in Bishton's bankruptcy in competition with his separate creditors, and that the trustee was right in rejecting the proof. The costs were allowed to be paid out of the estate, as the case was brought with the concurrence of the trustee.

The Coventry Movement Company.

THE first ordinary meeting of the Coventry Watch Movement Manufacturing Company, Limited, was held on the 14th ult., at the office of Messrs. E. T. Peirson and Son, Hertford Street. There was a large attendance of shareholders. Mr. Samuel Yeomans (chairman of directors) presided, and amongst those present were Messrs. I. J. T. Newsome, Charles Read, Rowland Hill, T. Kinder, J. Hawley, jun., J. Hewitt, R. Waddington (retiring directors), Masser (solicitor), E. F. Peirson (secretary), E. Adkins, T. J. Mercer, E. Denny, C. Shufflebotham, R. J. Pike, T. Gardner, W. Flowers, A. H. Marston, &c., &c.

The Secretary read the notice convening the meeting, and also the director's report, which stated amongst other things that the company was incorporated to counteract the effect of the formation at Prescot of a syndicate, including practically the whole of the watch movement makers. The directors had, after numerous enquiries, purchased the machinery and plant of Mr. E. Scarisbrick, so as to enable them to commence manufacturing without delay, and Mr. Charles Scarisbrick had been appointed manager. The directors had secured temporarily a factory in Hill Cross, it being their desire to erect a suitable factory as soon as possible. The time and attention of the directors having been to a great extent occupied in the initial steps of procuring, arranging, and fixing the necessary machinery, etc., they were unable to report much progress in the manufacture of movements, but those turned out were of a superior kind.

The Chairman moved the adoption of the report, and Mr. Waddington, in seconding, detailed the steps taken by the directors. He said it had been their intention to purchase the very best and latest machinery, and to make movements in an entirely different manner than that pursued at present, but the amount of capital subscribed not having justified this step, they had secured Mr. Scarisbrick's plant, &c., so that they could commence operations without delay. It was the intention of the directors to erect a commodious factory with steam or gas power, to introduce the best machinery, and to take up additional branches of the trade.

Other shareholders having spoken, the report was adopted.

The Chairman then explained the provisions of the articles in regard to the directors and proposed that the number be fixed at ten.

Mr. Charles Read, in seconding, said that he did not become a director from any selfish motive, but from a sense of duty to the old city, and in particular to the watch trade centred there. He had had no movements from the company, as it was his desire that the general shareholders should be supplied first. The directors' duties had been very arduous, occupying sometimes a day and a half per week; being only provisional directors, however, they had not launched out as they might otherwise have done, but if re-appointed they would feel they had the confidence of the shareholders, and would set to work in earnest. He felt sure that at the annual meeting next year there would be a satisfactory report to present to them.

The proposition was agreed to.

Mr. R. J. Pike, in complimentary terms, proposed the election of Messrs. Yeomans, Newsome, Kinder, Waddington, R. Hill, J. Hewitt, C. Read, and J. Hawley, jun.

Mr. T. Gardner seconded, and the proposition was carried with acclamation.

Messrs. E. Denney and T. J. Mercer were then elected directors, on the proposition of Messrs. Flowers and Marston, seconded by Messrs. C. Read and R. Hill respectively.

Mr. Mercer proposed, and Mr. Shufflebotham seconded, and it was agreed that the remuneration of the auditors (Messrs. E. T. Peirson and Son, chartered accountants), be fixed by the directors.

A successful meeting was closed with a very hearty vote of thanks accorded to the Chairman and directors on the proposition of Mr. Mercer, seconded by Mr. E. Atkins.

The Chairman, in responding, said that although the company had not been in existence four months and there were exceptional circumstances now prevailing, they had already supplied movements to various manufacturers. The company had already been of benefit to the trade: he had only a few hours ago heard that the Lancashire Company had reduced the price of some of the movements supplied by them. The directors would not rest satisfied until they had made the company a success as regards its service to the Coventry watch trade and as an investment to the shareholders.

Our Shipping Trade.

THE conditions which regulate our business relations with the colonies and foreign countries (or our shipping trade as it is generally called), are very different from those which obtain in the ordinary routine of our home trade. The length of time necessarily occupied by the transmission of orders, and the conveyance of goods, seriously hampers our ready action, and renders impossible the use of those quick and handy systems which we find so useful and helpful in our inland business. Hence in the putting up of shipping orders special care and attention are required. The effects of a mistake in execution or an error of selection may be lasting, and fraught with much annoyance and loss, both to consignor and consignee, while the difficulty of rectifying a mistake, when goods or invoice have once passed from our hands, is proportionally great: the correction in the majority of cases would arrive out too late, the goods either being on their way back again, or the opportunity of disposing of same having passed.

Undoubtedly there has been in the past much blundering on the part of the manufacturing jewellers in respect to the shipping trade, and a keener eye for and a prompter response to the requirements of the business will have to be cultivated if we are to keep and improve this portion of our trade. To successfully carry out such a business requires a certain adaptability of staff and appointments to cope with the extra work entailed, and to endeavour to undertake such with the ordinary equipment suitable for a small home trade can only end in disappointment and failure. This has too often been the case. Little makers, ambitious beyond their powers of production, have rushed in, thinking that a sure fortune was within their grasp, to find unfortunately that the pressure was greater than they could bear; that the conditions under which they were forced to work were such as they could not successfully grasp or cope with. Thus they had to retire from the competition, if not with actual loss, at least with their golden dreams unrealised. Those manufacturers only have made the shipping trade pay, who went into it systematically and with full resources, unhampered by pecuniary limits or an insufficient staff; who could immediately adapt their work and their execution to the varying needs of their customers, and who laid themselves out, from the first, for this particular kind of business.

The possession of a sufficiently numerous and "mobile" staff of workers, both in the workshops and warehouse, is an essential element of success. The contented stupidity of the British workman, and his stolid indifference to progress are generally known,[*] and it is only by long training that he can be forced out of his groove, and made to adapt himself readily to new requirements. Hence a master who has but one or two workmen is at a great drawback, while he who can command the services of many is equally at an advantage.

In catering for foreign custom we need to bear well in mind that we have different fashions and varied tastes to work for. Different that is from our home fashions and from each other, and to be well to the front we must study carefully the ruling requirements of each market, noting well the fluctuations of fancy as it affects our goods, and giving constant attention to the details of dress and ornament of each country. To this end, the fairly regular perusal of the fashion journals, and especially of our kindred trade papers, issued by the various countries we are desirous of serving, would be of great help. In fact a regular correspondent here and there, who could send us the earliest possible news of changes of fashion, and give us a constant supply of reliable information affecting our manufactures, would be found of great service to us.

Doubtless to many of our fellow manufacturers such ideas will appear preposterous, and will be duly pooh-poohed as visionary and unnecessary. "It is sufficient for us to make the goods—ours are good English patterns—leave fashions and tastes to the buyers." Such and similar remarks we fancy we hear in answer to our proposition, but herein lies the grand mistake. Good English patterns are not good foreign patterns. The very article that amply meets the demand of our home market and sells like wild-fire (as we say) is rejected again and again by our foreign clients; while goods which no home customer will look at are readily bought and reordered by shipping houses. We all know this well enough as a matter of practice; let us get to understand it as a matter of knowledge, and reason it out to its proper application in our work. Again as to leaving fashions and tastes to the buyers. Buyers come here, not to supply us with ideas and patterns to make up, but to buy our ideas and patterns ready-made; and the value of our orders will depend, not upon what they want, but upon what we have to show. We may depend upon it that a good trade in this direction will be accomplished by our reaching forward to meet it rather than by waiting for it to follow us. "Let those laugh who lose." We know from experience the value of the foregoing remarks and are satisfied to go on in the same way trusting for equal success in the future.

The keener and more critical conditions under which our export trade is now carried on is owing partly to the natural growth of competition and is partly the out-growth of past errors of judgment; and the very hardships of which we complain are due in a large measure to our own foolish conduct in the past. For instance, years ago a shipping order was looked upon by the manufacturer as a veritable godsend. With what civility he looked out all his shady patterns and furbished up all his old stock. It was a sort of common sewer by means of which all his waste material was got rid of; and through which all his abortions were forced into life. The consequence was that the foreign markets were glutted with bad and unsaleable stock, hideous in design and of wretched workmanship and finish. Parcel after parcel of this stuff was rushed off under the mistaken idea that anything would sell out there until the evil forced its own remedy to some extent. Instead of reorders, only loud complaints and parcels of returns were received by the disappointed manufacturers, and the English buyers and merchants had to look to other makers for fresh and more reliable goods. Unfortunately our trade is still suffering from the effects of this foolish policy. "Brummagem" jewellery earned for itself an evil, and to a great extent a well-deserved name, the odium of which it will take years and years of hard and honest work to overcome.

To some extent however, this condition of things is the direct result of the vicious demand. For a time the great call was for cheap goods, and use and ornament were sacrificed voluntarily, on the part of the buyers, to low prices. What wonder then if the makers rushed in with a flood of worthless and unsightly stock, to supply this depraved demand. In those days the idea that a thing might be cheap and yet tasty; that low price was not incompatible with fair work, had not been started, and "cheap and nasty" was the only rule. It rests with us of the present time to show what can be done in the way of pleasing designs and good soldering in the low-priced class of work. In this direction there is ample scope and plenty of opportunities for men of energy and business ability.

Another, and for us home makers, a serious result, was the speedy establishment of actual manufactories at those very places whence our best orders had come. This doubtless was but the natural development of the progressive life of the Colonies, but equally certain is it, that their adoption was accelerated by the causes before mentioned. For this we have ourselves to thank, and it is no use grumbling now. This production on the spot, however, forms a telling element in the present rush of competition, and has to be taken into serious consideration, both in the production of patterns, and in the pricing of articles.

There were, however, various manufacturers among us who displayed better judgment; who looked at this business with a more far-reaching gaze. They saw the possibilities both of success and failure, and worked consistently for the former. Their parcels were always selected with care and discretion. Their goods were appropriate to the requirements of the various markets, and were well made and finished. Their orders were always executed so as to give full satisfaction to their clients. And looking back, they have no cause to regret this line of conduct. Success and profit have been with them, and to them principally is due the fact that Birmingham is gradually regaining a better name for honest work and reliable goods.

And we would assure our foreign and colonial friends that there are still many such genuine and trustworthy makers with us; in fact, the class is growing. The mistaken policy of the past is being relinquished, and a more enlightened and mutually beneficial one is being adopted. We can see clearly now that the surest way to build up a successful business is to sell only those goods which our customers can readily sell again; not to force upon them large quantities of unsaleable stuff. Upon these lines, and with this understanding, we are ready for and anxiously awaiting the commands of our foreign buyers. Our clients will find us willing to accommodate ourselves to their wishes and requirements in every way. Our patterns are designed to meet their special wants, our workmanship is thorough and conscientious, our keenest attention will be given to the execution of their favours.

May we therefore venture to hope for a largely increased shipping trade to our mutual advantage.

Manufacturer.

Birmingham, *May*, 1889.

An Ancient Horologer.—There is a watchmaker at Ottensen, near Hamburg, says the *Hamburger Korrespondenz*, who has just entered upon his 104th year. His name is Göring. He was born at Chaux-de-fonds, the great watchmaking town in Switzerland. He enlisted in his boyhood into the French army, and went with Napoleon into Russia, but happily came back alive and took part in the battle of Waterloo. After the fall of Napoleon he enlisted in the Pope's Swiss Guard, in which he remained until the death of Gregory XVI. He then went back to his own fatherland, and took up the trade of his boyhood. He was too restless, however, to settle down quietly, and became a traveller in the clock trade, making long journeys in Russia, Turkey, the Danubian lands, and Asia Minor. In 1862 he gave up travelling, and bought a watchmaker's business at Ottensen, where he has lived ever since. The old boy has never been married, and lives an independent bachelor-life, without kith or kin, in the rooms over his shop.

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[*] This is, to say the least, rather a large order, for which the maligned B. W. must hold the writer of the article entirely responsible.--Ed.]

Technical Training.

UNDER the heading "The Industrial Value of Technical Training" the Marquis of Hartington contributes an article to *The Contemporary Review* of last month, in which, after a short introduction, are collated the opinions on the subject of practical men engaged in various industries from different parts of the country.

The following contribution of Messrs. Rotherham and Sons, of Coventry, will be of interest to our readers:—

In giving an opinion as to the need and value of technical education in the watch manufacture, it is, perhaps, necessary to define what is usually understood by this term among watchmakers. It is the course of instruction pursued in the various schools of horology in Germany, France, and Switzerland.

Briefly stated, the mode of instruction is as follows:—The student is put through a course of geometry and mechanical drawing to enable him to draught correctly the various parts of the watch. The drawing is done on a greatly enlarged scale, and the reason why the given proportions are adopted are indicated and demonstrated. Immediately following on this class teaching, he is called upon to pass into the workshop, and to make each piece from plain strips of brass and steel, conforming strictly to a reduced measurement and following out the related proportions of the drawing he has just executed in class. This is held to be the most direct way of imparting a just admixture of theoretical and practical knowledge in watchmaking.

Very striking results are to be seen in many of the continental schools of the success of this system of training, both in the excellence of the work produced and in the speed at which the training progresses. The complete course of instruction usually extends to three, and in a few cases to four years. We see nothing vague in the practice of these schools: no very high ideal of technical education is sought after, and the instruction has a direct bearing on horology, pure and simple.

A careful comparison of these results with those obtained by the seven years' system of apprenticeship, which is the rule for training watchmakers in this country, has gradually led us to the conclusion that it would be beneficial to the trade that similar schools should be encouraged and established in England.

We should, perhaps, here say that our firm has had a somewhat considerable experience of the apprenticeship system, as, up to ten years ago, we always had an average of 80 apprentices under training at one time in the various branches of the business; this average has since fallen to 30, although the total number of those in our employment is now greater than at any former period. And in view of the radical changes introduced in the processes of manufacture, and of the automatic machinery brought into use during the past ten or fifteen years, it has become clear to us that this method of training is doomed to extinction through unfitness for the altered circumstances.

A point bearing on this subject, and not to be lost sight of, is that, with the altered conditions of life that surround them, lads are not now so disposed to enter into the long service of a seven years' apprenticeship. We can think of no provision so calculated to meet this lapse of the old order of things, and supply the present wants of the trade, as a scheme whereby trained men from such schools as we see working to this end on the Continent, should, after a few years of general experience in manufacturing, become foremen in the various workshops, and centres from which technical information may be brought to bear on the general run of workmen whom they control and direct.

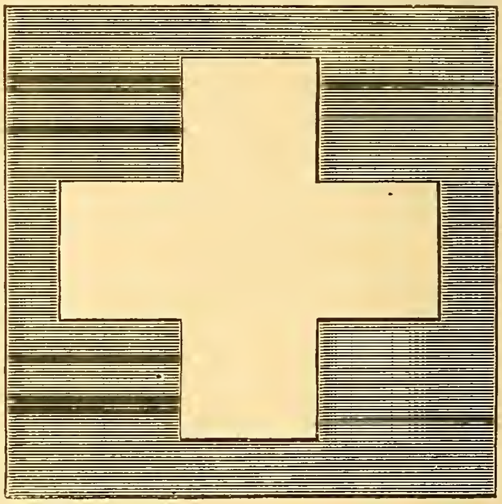
Until a year or two ago, only one such school existed in the United Kingdom, and that in London, with a very restricted course of instruction when compared with foreign schools. Latterly one other had been started in London, and one in Scotland, each in a small way. Since 1887, Coventry has established a Technical Institute, with a horological section. This institute has been started mainly by the liberality of the manufacturers connected with the two old staple industries of the city—*i.e.*, the ribbon and watch trades, both of which are now subject to the keenest of foreign competition.

It is, of course, a debatable question whether industries strained by a fierce antagonism should be left to fight without the substantial municipal and national support given to these institutions elsewhere. But be this as it may, it is obvious that those who, in a bad time of trade, set to work to start such an institute must have been strongly possessed of a sense of its importance to the industries in which they were engaged.

The Cross in Art.*

By J. W. Tonks.

THE subject before us is one which has been so closely associated with the Christian religion that it might almost be said to involve a consecutive history of the leading symbol of Christian faith during eighteen centuries. There are indeed many antiquarians, curious in the matter of the origin of the symbol; some perhaps, not without a secret desire to deprive the followers of the crucified Saviour of the honour of inventing it, who assert that the motive of a cross, that is of two lines crossing at right angles, was frequent in pre-Christian construction and ornament. That there are some specimens of such a character in the cross divisions of Druidic circles is not to be doubted, or that occasional construction and ornament in the far East seem to suggest the idea, may be at once conceded. There is also a question whether the cross, as it is called, upon which the Lord Jesus was impaled was a simple stake without the transverse bar, or if it really took the form to which later tradition assigned it. But these speculations, for they can be little more, and which are interesting enough to those whose main business is to thread the dark windings of the past, have little practical relation to the theologian, the architect, or the artist. Whatever resemblances in architecture, or in art, the diligent searcher may discover in Pagan remains, has been accidental rather than systematic: adventitious rather than essential, and one point soon becomes evident on a close study of the subject—that the cross, in a simple and afterwards a more elaborate form becomes the leading symbol of the Christian religion. The punishment, which was that of the vilest slaves, and a mark of infamy, was so common among the Romans, that pains, afflictions, troubles, were called crosses; and the verb *cruciare* was used for sufferings both of body and mind. The Saviour Himself had endorsed and fixed the symbol, by saying that one who would be His disciple must take up his cross and follow Him. We are thus prepared to note the overwhelming importance which gradually became attached to it.



GREEK CROSS.

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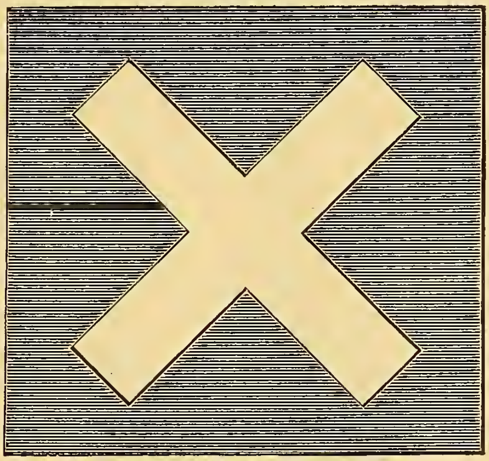
* A paper read by Mr. J. W. Tonks, at Queen's College, before the Members of the Birmingham Architectural Association, on 7th May, 1889.

Gibbon, in his "History of the Decline and Fall of the Roman Empire," will hardly allow it to be a genuine historic tradition that Constantine, previous to the great victory which decided the fate of that empire, saw in a dream the cross of light in the sky, which is said to have become his standard. But be that as it may, it is undeniable that in less than a century after the device which is now the Greek ensign, a white cross which may be described by four squares, placed at right angles, touching a central square, and displayed upon a field of azure, was recognised as the Christian standard. It was recognised as the Christian symbol for several centuries on tombs, in ivory carvings and in various manuscripts which have escaped the ravages of time. Curious is it also to note with what slow steps, and by the addition of another square to the lower limbs it gradually approached the form now known as the Passion Cross, and thus became more realistic. From a celestial vision, a heavenly symbol, it appears to have come by slow stages down to earth, and to have become at last a concrete expression of theological doctrine. The traditional vision of Constantine is expressed in the main lines of the present arms of Greece, a white cross of equal arms, composed of five squares as before mentioned, upon a sky of blue. But about the 9th and 10th centuries, in addition to the lengthening of the lower limb, thus describing what was regarded as the actual cross on which the Saviour was sacrificed, a disposition set in to change its colour. Instead of the celestial cross of white light, which had the effect of a spiritual symbol, as well as the tradition of a vision, the red cross began to be adopted, as the colour of blood, to give a more literal force to the image. To those who are interested in the study of Scripture symbols, there is a curious parallelism with the colours of the two horses at the opening of the first and second seals in the Apocalyptic vision. (Revelation vi., 2—4.) At the opening of the first seal, the Revelator says, "I saw, and behold *a white horse*, and he that sat thereon had a bow; and there was given unto him a crown; and he came forth, conquering and to conquer. And when He opened the second seal, I heard the second living creature saying, Come. And another horse came forth, *a red horse*; and to him that sat thereon it was given to take peace from the earth, and that they should slay one another; and there was given unto him a great sword." (Revised Version.) It is hardly a part of my province, in a paper like this, to do more than refer to the moral deductions which have been drawn from these sublime figures. But the going forth of Christianity in simple and apostolic purity, its spiritual conquests over evil and error have been frequently held to be represented by the first symbol; while the latter period, when the pure spirit of the Saviour became complicated with state-craft and priestcraft; when passions rose high over conflicting doctrines, and every controversy marked its angry progress in characters of blood and fire, has often been held to be indicated by the going forth of the red horse. What is more to our purpose, and what in fact caused this reference to Apocalyptic imagery, is that the tendency of the cross in art has been continuously downwards, from a pure spiritual symbol, to a concrete and realistic representation of the sufferings of the Redeemer. Having referred to the evolution, if I may so call it, of the Passion Cross, and its change of colour from that of white light to the scarlet of blood, let me go a step further, and show the remarkable change in the representation of the Saviour, which also went in the direction of realism. So long as the cross was composed of five squares, so long it was an emblem. But when the Passion Cross began to be generally adopted, the way was paved for the representation of the Saviour upon it; and by slow degrees, and in a highly conventional manner, this was effected. But the way in which it was effected is again curiously related to Constantine: therefore I may be pardoned for relating the legend which explains it. The emperor in one of his laws was careful to instruct posterity, that in obedience to commands of God, he laid the everlasting foundations of Constantinople.[*] We are told further by contemporary Greeks[†] that the emperor beheld in vision, the tutelar genius of the ancient Byzantium; a venerable matron, sinking under the weight of years and infirmities, was suddenly transformed into a beautiful maiden, fresh with the bloom of eternal youth, and with her hands stretched out to embrace the whole human family with constant blessing and Imperial protection. The dream, unfortunately, could hardly be described at present as adequate prophecy; but it is singular how close a relation the position of the arms of the virgin of Byzantium has to the earliest representations of the crucified Saviour when they began to be given on the Passion Cross. Representations at this early period always give the extended arms as perfectly horizontal with the palms of the hands outstretched. This was indeed referred to in ancient sermon or homily, not as an accident, or evidence of imperfect drawing, but as displaying the Lord Jesus with the outstretched arms of redeeming love, desiring to embrace the whole human family, and to be a saving help unto all nations. Thus the conventional image of the Saviour on the early Passion Cross was a spiritual symbol. Gradually as the symbol became lost, the realism became more accurate. The sublime benignity of the face turned directly towards the spectator, was succeeded by the sharpest definitions of agony. Little by little the head fell until it rested on one side, or nearly upon the breast. No expression save that of natural suffering remained. Almost as imperceptibly, and so slowly, that you can almost fix the date of a carving, a missal, or a stained glass window, by the extent to which this is done, the body began to hang upon the cross, and the arms to make an angle with each other. This angle became more acute as time went on, and we have only to look at recent stained glass, at modern pictures, or crucifixes, to see how entirely the spiritual symbol has departed, and how completely the idea of mortal agony occupies the mind of the artist.



CROSS OF S. ANDREW.

The development of the Christian system rather as an ecclesiastical hierarchy than a spiritual renovation, led to the development of the idea of the cross, not only as related to the Saviour, but also with regard to the more distinguished of his followers, who were successively canonised as saints. Thus S. Andrew, who subsequently became the patron saint of Scotland, had his name given to a cross of the shape of the letter X, upon which he is said to have been crucified. This was usually treated in white when any colour was adopted. The very fine cathedral seal of Rochester, of which I have an impression, ascribed to the 12th century, but probably two centuries later, displays the martyrdom of the saint, who is being fastened upon the cross with an extraordinary expression of grim serenity, quite characteristic of the times. He is shown physically as a great man, after the custom of the period, being nearly double the height of the two executioners, who with signs of diabolical delight are engaged in crucifying him. In a similar way S. George of England became identified with a scarlet cross of horizontal and vertical bars of equal length, while a later arrival S. Patrick, a possibly mythological personage, who does not appear in narrative until some 600 years after he is said to have quitted the scene of his labours, has a red cross similar in shape to that of S. Andrew.

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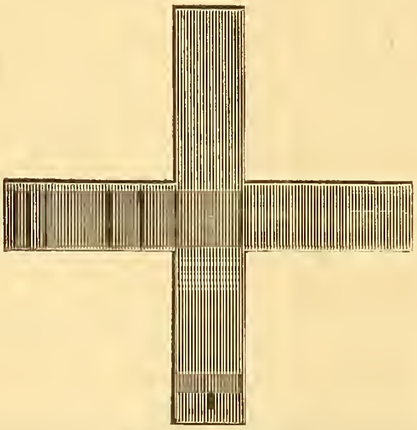
[*] Pro, commoditate urbis quam æterno nomine, jubente Deo donavimus. Cod. Theodos. l. xiii., titi v., legi 7.

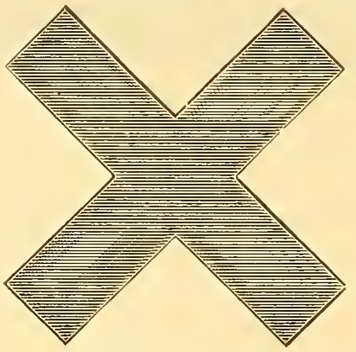
[†] Theophanes. Cedrenus.

The Union Jack of Great Britain therefore has the combined crosses of the patron saints of the three kingdoms; that of S. George of England forming the leading horizontal and vertical bands, while transversely, from corner to corner, the red saltire of S. Patrick is placed upon the white cross of S. Andrew. The azure which occupies the intervening spaces is a reminiscence of the blue sky against which the Cross of Constantine was said to be first seen in vision. The Arms of the City of London are mainly composed of the Cross of S. George upon a field argent (white); but in the dexter chief is seen the sword of S. Paul with its cross-handle; as while S. George was the national champion, S. Paul was held to be Lud's special patron saint.

The fish, which had early become a symbol with the primitive Christians, because it was held to have a relation to the Sacred Monogram, and therefore involved a confession of faith, assisted to compose one of the variations of the cross in art. The cross with fish-tail ends, known afterwards as the Cross of King Edward the Confessor, soon became much in vogue. It was the motive of many of the chivalric orders of European nations, and largely adopted in the time of the Crusades.


CROSS OF S. GEORGE.

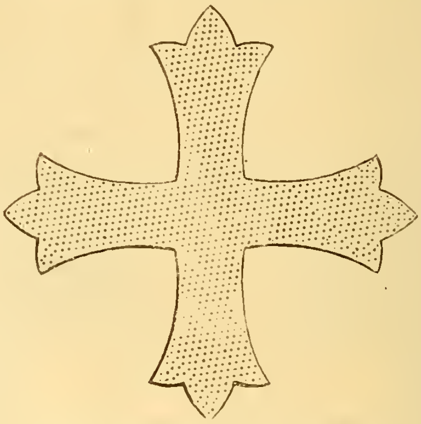
There is a curious legend of Denmark, about the 13th century, as to the origin of the Cross of the Dauneborg, which is singularly like that of the Cross of Constantine before referred to. Here, again, a red flag bearing a cross of light is seen in the sky previous to a great battle, by Waldemar II., King of Denmark. The shape of the cross is near that of the Passion Cross, but widening to the ends. The colour is white with a border of scarlet. The Arms of the Crusader Kings of Jerusalem are interesting, as they display forms which were the origin of many after varieties. A large cross of equal arms occupies the greater part of the vertical and horizontal centres of the shield. In the four inter-spaces are four crosslets exactly the shape of the original Greek cross. The large cross has at times circular ends; at other times, the Tau ends, that is, shaped like a T. Recurring to the going forth of the horses in the Apocalyptic imagery, there is another coincidence in the fact that, after the return of the Crusaders from the Holy Land, the colour frequently adopted was black. There have not been wanting those who say that as the horses, first white, then red, then black, went forth in vision, so Christianity, first pure, then lurid with passion, became after sunk in the darkness of ignorance and superstition, while spiritual things were set at naught. It is certain that the original idea of the cross was lost in the vagaries of heraldic blazon; and that, in their desire for novelty, the strangest results were produced. The cross crosslet, a cross of equal arms with the four ends also crossed; the cross fitchée, a cross with a pointed end, as if to fix in the ground; and the Patriarchal cross, to which I shall afterwards have occasion to refer, were among the best examples. One of the most beautiful English specimens of these sable cross arrangements is the shield of Saint Cross, near Winchester, the quaint old-world foundation of Gilbert de Blois, brother of King Stephen, which has retained its original character for 800 years.


CROSS OF S. PATRICK.

The making of the sign of the Cross having in the Middle Ages become an universal custom and superstition, it became customary to introduce the cross in monograms, and to add the signature to it as a pledge of solemn acceptance, or of the truth of what was previously written. Persons unable to write—and these were very numerous—used the cross as a symbol and pledge of the truth of the document to which they could not add their names; a custom which, even in our day, is not quite obsolete, although the use and meaning of it are entirely lost, among those who have recourse to it.

The Knights of S. John of Jerusalem, afterwards called Knights of Malta, first formed into an Order by Godfrey of Bouillon, A.D. 1099, were the originators of the white octagonal silver cross which has formed so prominent a feature in historic ornament. The beautiful form of this cross has, apart from its historic interest, led to its frequent use in nearly every country in the civilised world, while the Freemasons have adopted it as one of their most important emblems.

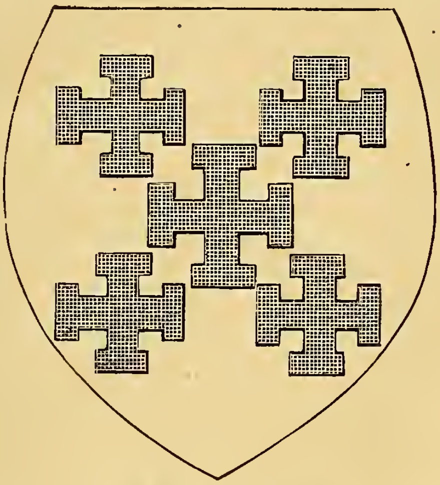
The Cross of Constantine, so called, eventually adopted as an Order of the Grand Duchy of Parma (Italy), being a red cross of equal arms, with tripartite ends, and having letters I. H. S. V. in gold in the respective arms, with the Sacred Monogram across it, appears to have been founded in the 11th century, and is certainly a very beautiful decoration.


CROSS OF EDWARD THE CONFESSOR.

A remarkable cross is that of the Order of Calatrava (Spain) adopted about the end of the 14th century by the Templars who made head against the Moors in that country. It is a red cross, with *fleurs-de-lis* ends, so large and well arranged that it forms an exquisite device, though the cross motive is in danger of being lost.

The Patriarchal Cross, or double armed Cross, sometimes called the Cross of St. Stephen, is a very interesting emblem, as it soon became the symbol, in pectoral crosses of an Archbishop, as contrasted with that of a Bishop, who was only entitled to the Cross with a single cross bar or arm. It is especially remarkable in relation to the architecture of the Christian cathedral.

When the Gothic style began to be evolved from the Byzantine which was its natural predecessor, and in the South of Europe, without a period of strongly marked derivations, such as we call Norman in our colder climate, the simple shape of the Early Christian Basilica, was soon varied by a remarkable change of plan. It is at this date impossible to say how far the idea of the cross as a plan led to the adoption of the transept; but it is certain that the custom soon became general, as a remarkable and beautiful innovation. The arched roof having once been introduced as an improvement on the square construction and flat roofs of the Greek period, it soon became apparent that the intersection of roofs caused by the transept, with the variety of effect given by windows and columns moving in different lines of perspective, was a distinct element of vitality in style. Thus it came about that the cathedral of the Middle Ages where the Bishop officiated and held his See, almost invariably possessed a transept, which in ground plan would represent what is called the Passion Cross; the choir occupying the position where the head of the Saviour would appear on a crucifix; the transept standing for the cross-bar on which the arms where extended; and the long, main portion of the cathedral where the congregation assembled indicating that part of the cross where the body and feet of our Lord were attached.



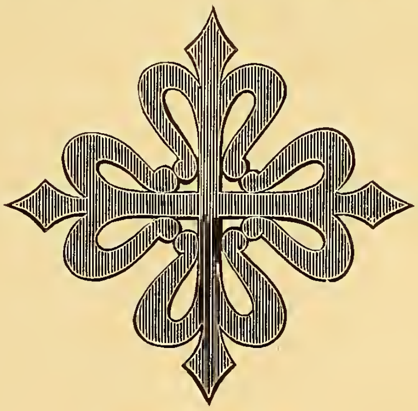
CROSS OF SAINT CROSS.

In some remarkable cases where the cathedral was the See of an Archbishop, and the means were available for carrying out the idea, a double transept was indulged in. This gave in plan the shape of the Patriarchal or Archiepiscopal Cross, and thus explains a further development of the Cross in architecture. The Romanesque Abbey Church of Königslutter in Germany, is one of the earliest examples of the simple transept in the form of the Passion Cross; while York Minster and Salisbury Cathedral in our own country are two of the most accessible examples of the double transept: though the latter, while being a most important See, is not especially connected with the See of an Archbishop. There is a further development in the direction of realism in the slight inclination of the choir from the right line of the centre of the nave; which was held to indicate to the faithful the inclination of the head of the Saviour on the Cross. This may be easily noticed in Lichfield cathedral.

As decorations the use of the cross was early. During the Diocletian persecution costly crosses of gold and silver are mentioned, which were borne by the faithful on their breasts. Constantine had erected on the grave of St. Peter a golden cross, 150 lbs. in weight. We see crosses, ornamented with jewels and flowers, in the painting of the catacombs of St. Ponziani and on the sarcophagus of Probus at the end of the 4th century. The cross also began, shortly after this period, to be borne in ecclesiastical processions. The most important place for the cross at that time, was the altar, where it at first crowned the ciborium. Afterwards the cross received its place on the altar-table, or on the wall against which the table was set. In the earliest times a plain cross sufficed without any of the realistic emblems of suffering; and when the figure of the crucified Saviour is given, it is youthful, beardless, with the tone of a conqueror rather than of a sacrifice; the arms extended in a direct line; the hips surrounded with a garment; the feet standing without any mark of nails, on a board or also on a cup. In the Romanesque period about A.D. 1000 to 1200, great splendour was displayed in these crosses, which though usually of wood, were overlaid with precious metals, ornamented with jewels, gems, pearls, enamelled representations, and filagree ornaments. The figure of the Saviour generally remained the same, but broader oblong pieces are frequently placed at the ends, which receive as a rule the symbols of the Evangelists. The reverse of these crosses is as a rule covered with engraved representations. In the treasury of the Mauritius church at Münster is a fine example of the cross of the 11th century, and it marks a departure, for it contains a relic of the true cross of Christ, as tradition affirms. This soon became a fashion, and the making of pectoral crosses to be worn by bishops on the breast, when celebrating the most holy offices of their religion, having relic chambers to be opened only on occasions to allow the contents to be seen and saluted by the devout worshippers, became one of the most important fields for the exercise of the arts of the goldsmith and jeweller. The Archbishop or primate, was in these works always distinguished by the cross with two transverse bars.

It is remarkable even in the early Gothic period, to notice how slowly the forbidding realism of later ages set in, with respect to the treatment of the cross. A beautiful early Gothic cross of gold, adorned with precious stones, still exists in the cathedral of Ratisbon. The four ends have representations of scenes in the earthly course of the Redeemer, but in the centre of each bar the four Evangelists are respectively pourtrayed in quartrefoils. The centre however, instead of giving the figure of the crucified one, the Saviour is shown seated, fully clothed, having the outer garment, as also the seamless vesture, holding the sacred book in his right hand; whilst the other, uplifted, emphasises his giving forth the words of eternal life.

The cross in later ages passed from the phase of a sacred symbol into the position of a mere personal ornament. Its varied forms, so symmetrical and so susceptible of jewelled decoration, would of themselves have commended it for that purpose; but there is no room to doubt that its value as a charm or amulet, no less than as a confession of faith, led powerfully in the same direction. In dark and superstitious centuries, a high importance was attached to the possession of such a symbol; and in later periods, when the religious spirit had died out, the custom remained, and the cross set with diamonds or other precious stones was still an important item in the series of jewels which formed the *parure* of a fashionable beauty. This is referred to by Pope in the year 1712, in his most highly-finished poem, "The Rape of the Lock." Describing Belinda, the heroine of this charming episode, he tells us that



CROSS OF CALATRAVA.

> "On her white breast a sparkling cross she wore,
> Which Jews might kiss and infidels adore."

The fashion has survived until the present time, and with varying form and treatment is likely to continue for centuries yet to come.

In this rapid and necessarily slight sketch of the history of the Cross in Art, all that I could attempt within the limit of time at my disposal, was to give an outline of the subject, which may afford a line of direction for after-study. There is hardly a more interesting pursuit than to follow the vicissitudes through which a symbol passes as it comes into contact with the varied mental, moral, and artistic sympathies of diverse races and nations in successive periods of their history. The vitality of the symbol, through a lapse of nearly 2000 years, would be less remarkable, were it not intimately connected with the central object of worship in a religion which has spread itself continuously with the spread of what is known as modern civilisation. In architecture, in pictorial and decorative art, its influence shows no signs of diminishing; indeed, the remarkable growth of a movement, which, for want of a better word, we describe as Ritualism, has led to its appearance in quarters where it could be least expected. Although some of the sacred associations, and much of the superstitious reverence with which it was surrounded in earlier ages, have disappeared in the cold light of modern rationalism, yet it is an element which no genuine student of art or architecture can afford to ignore. Its character, as we have seen, is often an index of period and a basis for style, so that it well deserves all the attention which learning and research can bestow. Careful analysis of the facts elicited, may lead to wise and appropriate treatment of the symbol in the art of the future: and it is with the hope that such a result may be attained that I have essayed to lay before you the few ears of knowledge, which, during my occasional walks in these extended fields of art, I have been enabled to glean.

The Art of the Jeweller.*

By Carlo Giuliano.

(Continued from page 196.)

AT the time in which Leonardo flourished, were commenced the two most considerable monuments of the goldsmith's art that have been handed down to us; the altar of St. James of Pistoia, and the altar of the Baptistry of St. John, at Florence. For more than 150 years the most skilful goldsmiths of Italy were engaged on these two monuments, and Leonardo enriched them both with his workmanship. The altar of Pistoia is composed of an immense number of bas-reliefs, statuettes, and figures in high-relief, disposed on several planes. It would be too long here to give a detailed description of this monument; but in order to give an idea of its importance I will describe its general character, and the most remarkable pieces of metal-work it contains.

On the right side of the altar are nine bas-reliefs, the subjects of which are taken from the life of St. James. A Latin inscription, engraved underneath, states them to have been made by Leonardo, in 1371. The bas-reliefs on the left side, which nearly all represent scenes from the Old Testament, are by the hand of the same artist. The shrine containing the body of St. Atto, is not one of the least precious ornaments of the altar; among other bas-reliefs on it is to be observed; an Annunciation, placed between little columns; it is an admirable work, and was executed in 1390 by Pietro, son of Arrigo Tedesco, to whom we also are indebted for nine half-length figures in a good style. Upon the same line are two prophets, by Brunelleschi, probably the only specimens in metal work remaining of this great artist. The statue of St. James in silver gilt, executed by Giglio of Pisa, in 1350, occupies the upper plane; the angels which accompany it and the tabernacle are by Pietro Tedesco, who also executed 24 statuettes distributed upon two planes, on the right and left of the statue of St. James. A great number of statuettes embellished the different parts of this monument. The principal are by Nofri, son of Buto; Atto Braccini, of Pistoia; Niccolo, son of Guglielmo; Leonardo, son of Matteo; Pietro, son of Giovanni, of Pistoia; and Pietro, son of Antonio, of Pisa. Other goldsmiths are named among those who, at different periods, laboured at the work; Lorenzo del Nero, of Florence; Lodovico Buoni, of Faenza; Meo Ricciardi, Cipriano, and Filippo. The weight of the altar is estimated at 447 lbs.

I will close this notice of the altar of Pistoia, by calling attention to the fact that among the artists engaged in its execution was a German, Pietro, son of Arrigo. The Germans had maintained their pre-eminence in the goldsmith's art, for Ghiberti, in his memoirs, makes mention of a celebrated artist of Cologne, who had made various wonderful pieces of metal-work for the Duke of Anjou, brother of St. Louis, to whose service he was attached. This goldsmith artist, whose name is not given by Ghiberti, died in Italy under the pontificate of Martin IV. Cicognara also, though often partial from a spirit of nationality, acknowledges that these German artists, who worked in Italy in the 13th and 14th centuries, did not go there to study their art, but rather to practise it.

At the end of the 14th century, two great artists issued from the workshop of a goldsmith, Filippo Brunelleschi and Luca della Robbia. Brunelleschi, having early shown an aptitude for all works of skill, his father placed him under a goldsmith. The young Filippo soon excelled all his companions in the mounting of precious stones, and acquired great skilfulness in sculptured metal-work; it was at this time that he executed the two prophets in silver that form part of the altar of Pistoia; they are works of great beauty. Brunelleschi, feeling his genius impelled him to higher enterprises, soon gave up the goldsmith's art; he became the rival of Donatello in sculpture, and far surpassed that great artist in architecture. The cupola of Sante Maria del Fiore, his highest title to fame, has caused us to forget his other works, which would, nevertheless, have sufficed to secure him pre-eminence among the first goldsmiths of his age.

Luca della Robbia entered early into the workshop of the goldsmith Leonardo, and learned under the direction of that excellent master to draw and model in wax, but his rising talents soon led him to devote himself solely to sculpture, and nothing is known of his youthful performances in the goldsmith's art.

To complete the history of Italian metal-work of the 14th century, I have yet to mention some celebrated goldsmiths, contemporaries of Brunelleschi and Luca della Robbia; Mazzano, of Piacenza; Nicolo Bonaventura, and his nephew Enrico, and the Florentine Arditti.

Mazzano's character was established by a magnificent crozier of silver gilt, more than four feet high, which existed, until 1798, in the cathedral of Piacenza. It was enriched with bas-reliefs, statuettes, ornaments, and enamels designed with taste, and finished with exquisite delicacy. This beautiful work, begun in 1388, was not completed till 1416, after 28 years of labour. A few years ago, some fragments of it were remaining in the collection of M. Boselli, upon a reliquary belonging to the cathedral of the Forli, which contains the head of St. Sigismund. The fine chasings, the nielli, and the enamels with which this reliquary is enriched, rendered it one of the finest specimens of the goldsmith's art of the 14th century.

Andrea Arditi is celebrated by a bust in silver of nearly natural size, serving as a reliquary to the head of San Zanobi, which is seen through a crystal placed on the top of the head, the metal being cut away for that purpose. This bust is enclosed in a magnificent shrine of bronze, a masterpiece of Ghiberti's preserved in the church of Santa Maria del Fiore, Florence. It is only exhibited once a year, on the 26th of January; but it is not impossible to obtain a sight of the reliquary on other days. The sculpture of Arditti is at once noble and simple; he may, however, be accused of stiffness, a fault often met with in works of that period. The execution is very careful; the bust is enriched by medallions finely engraved, upon which are represented some of the saints. Vasari, who passes a high eulogium upon this piece of sculptured metal work, attributes the making of it to Cione, but the inscription engraved upon the bust in Gothic characters, "Andreas Arditti de Florentia me fecit," is sufficient to decide the question.

The 15th century brings under our notice still more distinguished artists.

Lorenzo Ghiberti, son-in-law to Bartoluccio, received from that skilful artist the first principles of the arts of design. When scarcely twenty years of age, he had just left the workshop of his father-in-law to go to Rimini, when he was recalled to Florence by the latter to offer himself to the guild of merchants in that city as a candidate for the execution of the two doors for the

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* Read before the Society of Arts on March 19. (From the *Journal of the Society of Arts*).

Baptistry of St. John. Ghiberti had to contend with powerful rivals, among whom Brunelleschi, Donatello, and Jacopo della Quercia were the most esteemed. But, directed by Bartoluccio, who even assisted him, according to Vasari, in the execution of his piece for competition, Ghiberti produced so fine a work that Brunelleschi and Donatello acknowledged themselves vanquished. The judges ratified the disinterested decision of those great artists, and Ghiberti was charged with the execution of these gates, by which his name has been immortalised. The bas-relief of Ghiberti, still preserved in the cabinet of bronzes of the Florence Gallery, was admirable in design and composition; yet in these respects that of Brunelleschi, to be seen in the same cabinet, was in no degree inferior. Ghiberti owed his victory to the exquisite and finished execution of his bronze, which had been completed and re-touched with all the care which good goldsmiths then bestowed upon the most delicate specimens of their art; and it may be safely asserted that it was to his talent as a goldsmith that he owed his triumph in this competition with the greatest sculptors of the 15th century.

The brilliant success of Ghiberti obtained for him numerous orders for sculpture, yet he never renounced his original profession, but continued during his whole life to execute works connected with the goldsmith's art. Besides the silver bas-reliefs for the altar of the Baptistry of St. John, which are splendid pieces of sculpture, he even worked at jewellery. Thus, in the year 1428, he mounted as a seal for Giovanni, son of Cosmo de Medici, a cornelian of the size of a walnut, engraved in intaglio, which it was said, had once belonged to the Emperor Nero. The handle of chased gold was in the form of a winged dragon issuing from a cluster of ivy leaves. Vasari extols the finish and beauty of this work.

In 1439, Pope Eugenius IV. employed Ghiberti to make for him, during his stay at Florence, a mitre of gold, weighing fifteen pounds, adorned with precious stones of great value, the weight of which was five ounces and a-half. Lorenzo set all these jewels in ornaments, enriched with a variety of graceful little figures of children and others in full relief. On the front of the mitre was Christ seated on his throne, and surrounded by a host of little angels; on the back part was the Virgin, on a seat supported by angels, and accompanied by the four Evangelists. From what remains of the works of Ghiberti, we can form an idea of the elegant style and extreme delicacy of these precious jewels; and if he is justly considered as one of the greatest sculptors of modern times, he may also be classed among the first of goldsmiths.

The execution of the doors of the Baptistry of St. John occupied 40 years to complete, and during these long labours Ghiberti took, as his assistants, young goldsmiths, who became at a latter period skilful masters of the art; among these Masolino da Panicale, Nicolo Lamberti, Parri Spinelli, Antonio Filarette, Paolo Ucello, and Antonio del Pollaiuolo were the most celebrated.

It was in the workshop of the goldsmith Bartoluccio Ghiberti that Pollaiuolo acquired the rudiments of drawing and of the goldsmith's art. He made such rapid progress that he soon equalled his master, and acquired a reputation for skill which enabled him to work on his own account. He accordingly took leave of Bartoluccio and Lorenzo to open a shop in Forence where, for many years, he followed the profession of goldsmith with great success.

We have seen in the treatise of Theophilus that the art of working in niello, which consists in covering with a kind of black enamel the fine incisures of an engraving executed upon silver, had become, from the 12th century, an accessory to the goldsmith's art; and, accordingly, we must rank amongst the goldsmiths Maso Finiguerra, who, towards the middle of the 15th century, enjoyed at Florence a well-deserved reputation for his nielli upon silver. No one was ever known to engrave so many figures in so small a space, and with such perfect correctness of drawing. Among the nielli of silver preserved in the cabinet of bronzes of the Florentine Gallery, may be seen a pax executed by Finiguerra in 1452, for the Baptistry of St John; this is further curious as being the plate of the first engraving ever printed, and of which the Imperial Library of Paris possesses the only impressions. Thus the fame acquired by Finiguerra as a skilful goldsmith was justly eclipsed by the glory of having been the inventor of the art of taking impressions of an engraving upon metal.

Among the artists of the end of the 15th century who, after having been goldsmiths, became celebrated in painting or in sculpture, must be cited Andrea Verrochio, Domenico Ghirlandajo, and Francesco Francia. Verocchio, who obtained an equal reputation as a sculptor, and whose master-piece, the equestrian statue of Bartolomeo Colleoni, still stands in the Piazza of St. John and St. Paul at Venice, had begun life as a goldsmith at Florence; several cope buttons, a vase covered with animals and foliage, and a fine cup ornamented with a dance of children, had brought him into notice, whereupon the Company of Merchants ordered of him, for the altar of the Baptistry, two bas-reliefs of silver, which increased his reputation. Called to Rome by Sixtus IV., to restore, in the Pontifical Chapel, the silver statuettes of the Apostles, which had been destroyed, he acquitted himself of his task successfully; but his studies of the antique in the capital of the Christian world determined him to devote himself thenceforth exclusively to sculpture and painting. He had the glory of reckoning among his pupils Perrugino and Leonardo da Vinci.

Domenico Ghirlandajo was the son of Tommaso, a celebrated goldsmith, who had received the name of Ghirlandajo from an ornament in the form of a garland which had been invented by him, and of which the young Florentine women were passionately fond. It was naturally intended that Domenico should follow the profession of his father. His works, which consist principally of silver lamps of great value, were destroyed, together with the chapel of the Anunziata, at Florence, which they decorated, during the siege of the city in 1529. Domenico Ghirlandajo relinquished the goldsmith's art to devote himself to painting, in which he became illustrious. What earned Francia so high a reputation was his skill in cutting dies for medals, and for the coinage, then considered branches of the goldsmith's art. To these pursuits Francia had expressly devoted himself, and until he had attained to manhood had not even touched a pencil. It was therefore by a sort of miracle, for which there had hitherto been no precedent, that the labours of a few years sufficed to place him among the first masters of his time.

To close the list of the celebrated goldsmiths of the end of the 15th century and of the first year of the 16th, we must name Ambrogio Foppa, of Milan, surnamed Caradosso, and Michelagnolo di Viviano.

Caradosso was a skilful goldsmith in every department of the art. He principally distinguished himself by his enamels upon relief, and by the medals he engraved under the pontificates of Julius II. and Leo X. He also excelled in making little medallions in gold, enriched with figures either in full or in high relief, that were worn in the caps or in the hair. According to Cellini, he was still living under Clement VII.

The taste for jewels enriched with little figures either detached or executed in high relief, and covered with enamels, was prominent in Italy in the 15th century. I may point out among the finest a pax preserved at Arezzo, in the treasury of the Madonna. This pax was given, in 1464, by Pope Pius to the Siennese, his fellow citizens, who afterwards made a present of it to the people of Arezzo.

Michelagnolo was one of the most esteemed goldsmiths of Florence, in the times of Lorenzo and Giuliano de Medici. He was in much repute for the mounting of precious stones, and executed with great perfection nielli, enamels, and works of chasing. Vasari cites, as works of great beauty, his decoration of the armour worn by Giuliano de Medici in a *carrousel* which took place upon the Piazza Santa Croce. The best proof of the merit of Michelagnolo is the eulogium passed upon him by Benvenuto Cellini, of whom he was the earliest instructor.

Benvenuto Cellini was born in 1500. After spending nearly two years in the workshop of Michelagnolo, to whom he had been apprenticed at the age of thirteen, he was placed under Antonio di Sandro, another Florentine goldsmith and artist of great talent. He subsequently worked under different goldsmiths of Florence, Pisa, Bologna, and Sienna, to which latter place he had been banished in consequence of an affray. All the time he could steal from the goldsmith's work he devoted to drawing and the study of the works of the great masters, particularly those of Michael Angelo, of whom he was a passionate admirer.

At Pisa he often visited the Campo Santo, and zealously copied the antiquities it contains. At the age of nineteen he went to Rome. During the two years he passed there, on this his first visit, he devoted himself almost exclusively to the study of antiquities, which he only relinquished to work at the goldsmith's art when he found himself in want of money. It may easily be imagined that, by following this course, Cellini, who was endowed with great intelligence and a lively imagination, soon became a distinguished artist.

In 1523, a new quarrel with his neighbours having forced him to fly from Forence, he retired to Rome, where he resided until 1537, with the exception of some months passed at different periods in Florence, and the time he employed in visiting Mantua, Naples, Venice, and Ferrara. During these fourteen years he established his fame as a goldsmith, and made his most beautiful jewels, as well as the dies for the money of Rome, and the medals of Clement VII. and Duke Alexander. Cellini first went to France in 1537. He was presented to Francis I., but this Prince having left Paris for Lyons, Cellini decided upon returning to Rome. He was thence summoned back again by Francis I., in 1540. During nearly five years which he spent at Paris he executed for the king a large number of fine works, of which the only one remaining is a golden salt-cellar preserved in the Cabinet of Antiquities at Vienna. Cellini, on his return to Florence, devoted himself to the higher walks of sculpture. It was at this time he cast his bronze statue of Perseus, and the fine bust of Cosmo I., and he also sculptured in marble a crucifix of natural size, which Vasari considers as the finest thing of its kind ever executed. Yet he did not give up the goldsmith's art, and still made lovely jewels for the Duchess Eleonora. After having served 25 years in the service of the Grand Duke of Tuscany as sculptor, goldsmith, and master of the mint, Cellini died in 1561, inadequately recompensed for his great works, but leaving behind him a high and well-deserved reputation. There can be no doubt that Cellini was one of the most eminent of artists, and that during his long lifetime he made a considerable quantity of pieces of goldsmith's work.

I will now briefly notice some Italian goldsmiths who distinguished themselves in the 16th century. Giovanni da Ferenzuola was skilful in his workmanship of table plate and goldsmith's work properly, so-called, *cose grosse;* Luca Agnolo, a good draughtsman, the best workman that Cellini knew when he returned to Rome in 1523; Pilote, quoted by Vasari as very skilful; Piero Giovanni and Romalo del Tovaloccio, who were unequalled in the art of mounting precious stones in pendants and rings; Piero di Mino, renowned for his filagree work: Lautizio di Perugia, who excelled in engraving seals: Vicenzio Danti, who had executed in his youth—before he had exclusively devoted himself to sculpture—some exquisite works in gold; nor should we omit Girolamo dal Prato, pupil and son-in-law of Caradosso, who worked at Cremona, and was called the Cellini of Lombardy.

From the end of the 13th century till towards the end of the 14th, the goldsmith's art in Italy followed step by step the progress of sculpture, with which it was, as it were, identified. The forms became pure and correct, the style was improving by the study of ancient examples, while the large pieces of metal work for the decoration of churches still preserved a religious character. The 16th century was marked by a decided taste for classical and mythological subjects, in which the goldsmith's art largely partook. The style formed under this influence was well adapted to jewels and objects of common use, which assumed at that period the most elegant forms; but it proved detrimental to ecclesiastical work, by depriving it of that serious stamp which had distinguished it in the middle ages.

We have reason to believe that from the beginning of the 16th century the French goldsmiths had relinquished the Gothic style, and adopted that of the Italian Renaissance, being influenced by the artists whom Louis XII. and Francis I. had attracted to the Court of France. Of this we have proof in Cellini's eulogium on the labours of the Parisian goldsmiths. According to this statement, more works were executed in Paris than elsewhere, in *grosserie*, a term which includes church metal-work, table plate, and figures of silver. The works executed by the hammer had attained their degree of perfection unequalled by any other country.

Cellini's residence in France, from 1540 to 1545, must have exercised a great influence over the goldsmith's art, more especially upon the jewellery, in the execution of which he was unrivalled. All the French jewels were then executed in the Italian style. Mythological subjects, therefore, became much in fashion, and occupied almost exclusively the imagination of our goldsmith-artists. In the absence of specimens, the proof of this will be found in the pretty engravings designed as goldsmiths' models by Etienne Laulne, who himself followed that profession. The exquisite rings of Woeiriot, a goldsmith of Lorraine, established at Lyons, where he flourished about 1560, partook equally of the Italian taste of that epoch. It is, therefore, difficult now to distinguish the Italian from the French jewels of the second half of the 16th century. Very few names of French goldsmiths belonging to the 16th century have been transmitted to us. Mention is made of Benedict Ramel, who executed a portrait in gold of Francis I.; François Desjardins, goldsmith and lapidary to Charles IX.; Delahaie, who was goldsmith to Henry IV. Nor should we omit François Briot, the most skilful artist of his time, although the only examples known of his works are vessels in pewter. Nuremberg and Augsburg became, in the 16th century, the principal centres of the goldsmith's art in Germany. At a later period, Dresden, Frankfort-on-the-Maine, and Cologne alike produced skilful goldsmiths. The goldsmiths of Nuremberg preserved in their productions, longer than those of Augsburg, a certain feeling of German art; but, in the second half of the 16th century, the productions of the German goldsmiths are so confounded with those of the artist of Italy in everything relating to the execution of figures, bas-reliefs, and ornaments, that it would be very difficult to distinguish the one from the other, were it not for the form of the vases, which always preserve a stamp of originality. Moreover, nothing can be more graceful than the arabesques which enrich the German metal work of that period, nothing more exquisite than the little twisted figures that form the handles.

The decided taste at the end of the 16th century, and especially at the beginning of the 17th century, for these cabinets, and which were made principally at Augsburg, afforded the goldsmith-artist increased opportunities for exercising their talents in the execution of silver statuettes and bas-reliefs with which the finest of these cabinets are very frequently enriched. The goldsmiths of Nuremberg and Augsburg produced also pieces of sculpture often remarkable for their judicious composition, their purity of drawing and finish of execution.

(To be continued.)

Messrs. Tiffany & Co.'s Exhibit for the Paris Exhibition.

It is the universal opinion of experts, says the New York *Jewelers' Circular*, that the exhibit of jewels prepared by Messrs. Tiffany & Co., especially for the Paris Exposition, and recently placed on view in this city, represents the highest attainment of the jeweller's art in America. The collection, which is valued at 500,000 dols., is the result of several years of patient thought and study. The object of the designers, according to the plan that had been adopted, was, as far as possible, to utilise the rude, yet characteristic Indian and aboriginal forms, and the best of later American models, also employing American gems largely in the decoration. The result of all this painstaking labour is simply bewildering to the beholder. It reflects the highest credit on the heads of the house of Tiffany & Co., heads on which, to be sure, high honours rest easily, and warrants the belief that in making this exhibit they were actuated, not so much by the desire of self-aggrandisement as by a patriotic determination to put the American jeweller in the foreground at Paris among all the competing nations.

The following is a list of the principal objects :—

Brooch.—Shape taken from the carved wooden masks used by the medicine men of the Chillkat Indians, Alaska. Brown pearls from Tennessee.
Brooch.—Shape after the decoration in basket work of the Hupa Indians, California. Pink pearls from the Miami River, Ohio.
Brooch.—Shape from the decorated horse-hide shields used in warfare by the Sioux Indians. Dakota pearls from the Cumberland River, Tenn., and emeralds.
Brooch.—Chrysanthemum, rubies, diamonds and canary brilliant.
Brooch.—Decoration, study from the Sitka Indians (Esquimaux), Alaska. Tourmaline from Maine.
Brooch.—Decoration, "Bur Marigold," wild flower of the Southern United States. Pearls from Tennessee.
Brooch.—Decoration, study from the Sitka Indians (Esquimaux), Alaska. Tourmaline from Maine, and golden beryl from Connecticut.
Brooch.—Decoration, study from the American shell bark (hickory nut). Garnets from Arizona.
Brooch.—Pearls from the Miami River, Ohio, and green sapphires from Montana.
Brooch.—Decoration, "Florida Palm." Aquamarine and Tourmaline from Maine and garnets from Arizona.
Brooch.—Black pearls from Lower California.
Brooch.—Decoration "Aster." Cinnamon diamonds and sapphires in decarbonised steel.
Brooch.—Green pearls from the Cumberland River, Tenn.
Ring.—Decoration and shape taken from the Navajos Indians, New Mexico. Sapphire.
Ring.—Decoration, study from basket work of the Hupa Indians, California. Tourmaline from Maine.
Ring.—Decoration, Sioux Indians ; study of "Prairie Wolf."
Ring.—Decoration, "Arrow-leafed Violet." Pearls from the Miami River, Ohio, and sapphires from Montana.
Ring.—Decoration, study from the..............Indians. Garnets from Arizona.
Ring.—Decoration, study from the Sitka Indians, Alaska. Garnets from Arizona.
Ring.—Ruby en cabochon from India and pearl from Miami River, Ohio.
Ring.—Pink pearl from the Miami River, Ohio, and brilliants from Brazil, South America.
Ring.—Pearl from the Miami River, Ohio, and brilliants from Brazil, South America.
Vinaigrette.—Decoration, "Forget-me-not" and diamonds. Watch set in top.
Vinaigrette and Bonbonnière.—Decoration, "Bunch of Violets."
Vinaigrette.—Decoration, gold filigree and rough sapphire rock crystal from North Carolina.
Vinaigrette.—Decoration, diamond and enamel smoky rock crystal from North Carolina.
Vinaigrette.—"Rosebud," decoration in gold ; study from Chillkat Indians. Rock crystal, diamonds, emeralds and moonstones from North Carolina.
Vinaigrette.—Bear and bee, decorative Japanese "American gold" smoky rock crystal from Colorado.
Vinaigrette.—"Trumpet Creeper," gold and enamel.
Sleeve Links.—Decoration, study from the Navajos Indians, New Mexico. Garnets from Arizona and Amazon stone from Virginia.
Sleeve Buttons.—Decoration, study from the Sioux Indians. Moonstones from Virginia.
Sleeve Buttons.—Decoration, study from the Zuni Indians. Opal agate from Mexico.
Sleeve Links.—Decoration, Hupa Indian ; study from the dentalium shell used as wampum or money. Hollaftonite from New York.
Sleeve Links.—Decoration, study from the Cherokee Indians. Amazon stone from Virginia.
Sleeve Links.—Decoration, study from the Inuit Indians, Alaska.
Sleeve Links.—Decoration, study from quilt work of the Sioux Indians, Dakota. Rhodonite from Massachusetts.
Sleeve Links.—Decoration, study from the Navajos Indians, New Mexico. Wollastonite from New York and fossil coral from Iowa.
Sleeve Links.—Decoration, study from the Inuits, Alaska. Fossil coral from Iowa.
Sleeve Links.—Decoration, study from the Sitka Indians, Alaska.
Sleeve Links.—Ruby en cabochon and jade ; East Indian.
Lace Pin.—"Heliotrope." Enamel and diamonds.
Lace Pin.—"Mignonette." Enamel and diamonds.
Lace Pin.—"Sweet Elysium." Enamel and diamonds.
Lace Pin.—Decoration, cactus, New Mexico. Emerald from North Carolina and pearls from Tennessee.
Scarf Pin.—Purple pearls from the Cumberland River, Tenn.
Scarf Pin.—Light green pearl (Lower California) and rattlesnake, United States.
Watch and Chatelaine.—Style, First Empire. Enamel, diamonds and peridots.
Watch and Chain.—Decoration, "Hungarian."
Watch.—Decoration, "Apple Blossom." Rose diamonds.
Watch and Chain.—Lapis lazuli, rose diamonds and rose topaz.
Watch.—Decoration, "Fringed Gentian," United States. Sapphires and diamonds.
Pendant. — Decoration, study from the Chillkat Indians, Alaska. Cinnamon diamonds.
Pendant.—Decoration, canvasback duck. Aquamarine from Maine and brown diamonds from Brazil.
Pendant.—Decoration, study from basket-work of the Navajos Indians, New Mexico. Garnets from Arizona and spessartite garnet from Virginia.
Pendant Bonbonnière.—Sapphires.
Necklace and Pendant.—Pearls from the Miami River, Ohio, and from the Cumberland River, Tenn.
River Brilliant Necklace and Pendant.—Decoration, hazelnut bud.
Diamond Necklace.—Decoration,   United States. Study from flower "Mountain Fringe."
Diamond Necklace.—Style, "Colonial," 1776.
Diamond Necklace.—Style, "Empire," 1800.
Bracelet.—Garnet from Arizona and Tourmaline from Maine.
Bonbonnière.—Agurite, malachite and rough garnets from Arizona.
Bonbonnière.—Turquoise from New Mexico and rock crystal from North Carolina.
Bonbonnière.—Gold and enamel. Pearls from Tennessee.
Bonbonnière.—Decorations, Limoges enamel, fait à la point in gold.
Match Box.—Decoration, study from the Hupa Indians, California. Turquoise from New Mexico.
Match Box.—Decoration, Chillkat Indians : study of a "Crow." Abalone pearls from California and Turquoises from New Mexico. Iron and gold.
Match Box.—Decoration, study from the Zuni Indians, in gold and enamelled rhodonite from Massachusetts.
Hair Ornaments.—Sapphires and Rose diamonds.
Card Case.—Lizard skin, natural colour, from America. Gold wire work with sapphires.
Purse.—Decoration, chased gold and pearls woven in bead work of the Sioux Indians. Pearls from the Cumberland River, Tenn.

The Diamond.

By W. Ford.

(Continued from page 153.)

ROUGH diamonds are found in various quantities and qualities in India, Brazil, Borneo, the Ural Mountains, South Africa and Australia. India produces large quantities of rough diamonds of all sizes. The Hindoo Rajahs at one time monopolised the use of diamonds in India, but when India came into the possession of the English, the diamonds were then generally worn by the rich natives of India. We have the system of weighing the diamond by the carat also from India ; the origin of the weight, however, is from the Arabic word Kuaro, the name of a seed of a pod-bearing plant growing on the Gold Coast of Africa, which when ripe and hard is invariably of one size, and was used in weighing the small grains of gold generally found near the coast, and is used at the present time nearly all over the world.

In Brazil, diamonds were first found when searching for gold. The natives did not know they were diamonds until Bernado Tobo, an inhabitant who had been in India and who had seen the rough diamonds there, took some to Lisbon and established their genuineness. The European merchants, who had never seen any other diamonds but Indian, thought that if any other diamonds were brought into the market by the discovery of new mines, their stocks of rough diamonds would fall considerably in value ; so the merchants spread the report that the so-called Brazilian diamonds were only the refuse of the Indian mines, exported from Goa to Brazil ; so, to checkmate the Indian merchants, the Brazilian merchants sent the Brazilian rough diamonds to India, and sold them as Indian diamonds.

When it was assured that diamonds were to be found in Brazil, searching for gold was abandoned, and the inhabitants left all to search for diamonds ; even the crops of fowls were searched for diamonds, and many were found in that way; some stones were found adhering to the roots of vegetables.

In the year 1754, a slave who had been working in Minas Gervas was transferred by his master to Baia, and finding the soil the same in appearance, suspected that there must be diamonds existing in the locality, and after searching found a large quantity. This becoming known, the place was soon swarmed with immigrants from all parts, expecting to make large fortunes. The method of searching for diamonds in Brazil is when the dry season (which lasts from April to October) has diminished the depth of the narrow rivers and creeks (of which some run nearly dry) the soil at the bottom is dug out and thoroughly examined and sorted; many diamonds were found in holes into which they had been washed by the running streams. When the dry season was over, searching was discontinued; the huts, which were constructed at the sides of the creeks, were furnished with a large wooden trough in the centre and elevated seats on one side for the overseers, who are always on the watch over the slaves who were at work at the trough. The negro labourers put enough of the soil into the trough and allow water to flow over it and at the same time stir it up with a wooden bar or with their hands, until the water runs clear. Directly a diamond was found it was put into a basin which was hung up from the roof of the hut by cords, so that the overseer could see each stone put in. Nobody was allowed to touch this basin until the time of leaving the creek, and then it was examined in the presence of the chief overseer, each stone counted and taken over by the master. If a slave found a diamond weighing eighteen carats he received his liberty, besides a sum of money. He was marched round, decked with flowers, and sometimes carried to his home in triumph.

Many diamonds were stolen by the slaves and hidden till nightfall, when they were disposed of in many ways. Illicit diamond buyers were as numerous at that period as at the present time at Kimberley mines.

It is believed by some merchants that the Brazilian mines are exhausted, but I think that is not a fact, considering good-sized stones are even at the present time found hundreds of miles from the old washings, showing the existence of diamonds in other parts of Brazil.

(To be continued.)

New Books.

Electro-Deposition. By Alexander Watt.*—The Third edition of this valuable work has just been published, "revised, corrected and enlarged." As we have already noticed the former editions, it is only necessary to say that the present edition contains all the information of its predecessors and is brought up to date by numerous additions, including an appendix of forty pages, which explains some of the new processes—the deposition of platinum, of aluminum and its alloys, the electrolytic treatment of zinc and its ores, the deposition of cobalt, the electrolysis of lead salts, the deposition of alloys, &c., and contains tables for reference, useful to both the student and the practical plater.

The Book of Sundials †:—The second edition of this interesting book by the late Mrs. Gatty has just been published by Messrs. Bell and Sons. Miss H. Gatty and Miss E. Lloyd, who helped largely in the compilation of the original work, are responsible for the new issue, which contains a much fuller collection of notes than the first edition. "A dial in the garden is like a peacock on the lawn, a sign of leisured ease," says the *Athenæum*, and this miscellany is one to turn over in an idle hour. It contains the record of many quaint fancies and dilletante triflings, among which are quoted some of the various opinions that have been held about the utility, etc., of sundials. The styles of inscription that have been held most in favour are also illustrated by instances, one of the best of which is a reply of a testy old Bencher who, being asked by the workman who came to enquire what inscription to put on the dial which formerly stood in The Temple, said to him, "Begone about your business." The workman, taking it literally, duly inscribed it, and all the Benchers agreed, upon seeing it, that nothing more appropriate could be found. To whom is due the notion of measuring time by means of the sun is uncertain. Dials are known, however, to date back from the earliest antiquity, and every research has evidently been made in the compilation of Mrs. Gatty's book to locate their inception and trace their history. The book, which is handsomely got up and copiously illustrated, contains an appendix on the construction of dials by Mr. W. Richardson, who, seconding Mrs. Gatty's appeal for the preservation of old dials from the vandalising proclivities of the modern architect and the clergy who employ him, very appositely remarks that a sundial would form a more ornamental feature in a building than the blank window and some other contrivances that are adopted to relieve the monotony of modern wall surfaces.

Tests for Non-Magnetic Watches.

IN a communication to the American *Electrical World* Mr. Duncan gives some advice to wearers and manufacturers of watches on the above subject that is worthy of the attention of modern watchmakers.

People operating or working around dynamos are often called upon to make or assist in some test intended to demonstrate the practicability, or otherwise, of non-magnetic watches, and in very many instances I have found people who think the only test is, if possible, to find some place on their dynamo, usually some corner near the armature, where the lines of force are concentrated sufficiently to retard the motion of the balance, and, in a few cases, stop the watch while in contact with the dynamo.

There are, unluckily, about the country a few old pattern dynamos that are rich in such points, and though they are quite successful in stopping watches, it is not to the credit of the efficiency of the dynamo.

A non-magnetic watch presents to the manufacturer the following problems for solution. Such parts of the movements as will become polarised—owing to the metal of which they are made—when brought into a magnetic field, and thus render the watch useless as a timekeeper, must be replaced with metals non-magnetic, that will give equally as good results in time-keeping as well as in the problems of manufacture or durability. That tests of these qualities may be made by any one, and of a nature calculated to show only correct conclusions, is the object of this paper.

The parts of a watch most vital to its time-keeping are known as the balance, hair spring and the escapement, and these parts are the most expensive to manufacture, as well as being those upon which the skilled adjuster shows his skill as a workman.

When a watch with these parts of the ordinary construction is placed within a magnetic field, the pieces feel the magnetism in the order named, and so retain it, after removal from the magnetic field. And in the watch of ordinary construction these parts are made mostly of steel, which is very sensitive to magnetic influence and retains it longer than any other metal; consequently it is the worst possible metal to use for such parts in this electric age.

Few persons outside of those engaged in watch manufacture, can realise the obstacles to be overcome in making these parts named of non-magnetic alloys that had all the properties of steel in expansive ratio, elasticity, as well as to weld, turn and polish; in fact, a book could be written entitled 'Recent Problems of American Watchmaking,' that would be very interesting reading, especially to such manufacturers as have not passed the experimental stage.

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* Crossby Lockwood & Son, 7, Stationers' Hall Court, Ludgate Hill.

† The Book of Sundials. Collected by Mrs. Alfred Gatty. New and Enlarged Edition edited by H. K. Gatty and Eleanor Lloyd with an Appendix on the Construction of Dials by W. Richardson. (G. Bell & Sons, 10s. 6d.)

And it is no idle boast when I say that an alloy hair spring is now made by the Waltham Watch Company that is better than steel for a watch hair spring, and the elasticity is not a property of hammering, rolling or drawing, but of the alloy, and that the spring can be heated to a red heat and in no way anneal or change the elasticity, as it would were it a property of artificial hardening; and the spring daily shows better results than the older and more uncertain fire-hardened steel hair spring.

To test a watch for any purpose it is necessary to know how it runs, or, to be more exact, what its daily variation is by some standard clock, and this is known as the daily rate. The watch must remain in the same position throughout the trials, that the conditions may be the same, as no watch but has an error, so-called, due to change of position, this error being the smallest in the highest priced watches.

And for the benefit of those who think otherwise, let me say no watch ever keeps perfect time, nor can such a watch be made. After having found what its variation is for the twenty-four hours, expose the watch to some strong magnet or dynamo, at the distance it would be when in the pocket, and for about the length of time a person would be in the field of the dynamo, if in attendance, and, having noted the time by comparison with the standard, again note the time after the exposure to the dynamo, and note the error, if there is any.

This test (the most crucial) will have but one value, and that will be in deciding whether it is possible to carry a watch around a dynamo and be sure of accurate time, unless you avoid some point where the lines of force are concentrated. In some such cases presented to my personal attention I have found the magnetic force outside the dynamo stop the watch, due to the steel second hand being held by the magnet, and by replacing the hand by one of gold the watch was not in the least affected by the dynamo.

I have yet to find a case where a Waltham non-magnetic watch could not be carried by a dynamo attendant in his pocket around the dynamo when in attendance, without disturbing its running or time-keeping qualities, but I think a magnet could be made that will stop a watch that was made wholly of copper; and I think I have the support of some of our most eminent electricians in this country in this statement.

And before resuming the last and decisive test, I wish to say a word to such as have so often as a test placed their watches upon a dynamo and left them to run for a period of twelve or fourteen hours, that it is a test that no sane man would deem fair, as it usually ruins the balance pivots by so doing, as the balance arbor or shaft is a small piece of steel about one-eighth-of-an-inch long and about the size of a cambric needle, the ends or pivots turned down to about four one-thousandths-of-an-inch and running in jewels; and when the watch runs for a few hours in an intense field these little pivots are drawn to one side of the jewel, with force sufficient to wear, and often bend them, and thereby causing the watch to run badly till the proper repairs are made or a new arbor is put in.

We now come to the final test of the watch, which can be readily decided. The rate of daily variation of the watch being known from the first trial, and it having been exposed to a magnet that would have rendered an ordinary watch useless instantly, it only remains to repeat the first trial under the same conditions of position, temperature, and duration of time of trial, comparing the difference with the first rate of the watch obtained, and the difference, if any, will be due to the magnetism remaining in the watch.

Dynamo attendants form but a very small part or the watch-carrying public, who require a watch that will not be rendered worthless by magnetism, and who are liable to come within the field of some magnet for a short time and do not know it till their watch shows some freaks as unexpected as they are undesirable. Yet such dynamo attendants are the persons that usually make the test of the non-magnetic watch for themselves and friends, and if this little sketch of a proper test aids them in so doing, its aim will be accomplished.

Trusts.

A JEWELLERY dealer tells, in the *Chicago Daily News*, how the business is affected by monopolies. In recounting the difficulties of the jewellery business he said: It would seem that manufacturers were bent upon minimising the expenses incident to the personal adornment of the fair sex. If not this, they are shrewd enough to tighten the coils of monopolistic power chiefly about those articles that are in demand for their utility as well as for their beauty. At any rate, there is no trust among the manufacturers of jewellery proper, but the makers of watches and silverware practically seek to dictate the minutia of our business in so far as those articles are concerned. In such articles as rings, brooches, pins, and trinkets there is a generous rivalry among manufacturers which has tended to be beneficial both in enhancing quality and in reducing cost. The man who buys jewellery to day of a dealer who does not demand an exorbitant margin of profit pays pretty nearly a normal price for what he gets.

With articles of utility, however, the matter is different. For four years the watch trust has been growing in power, and most dealers, especially the proprietors of small stores, have been made to feel its influence. Most of us had our profits greatly reduced and not a few have been run out of the business. I will venture to-say that when the Merritt anti-trust bill was introduced into the house there were few jewellers in the state who were not wishing it would pass, so as to bring the needed relief. The American Watch Manufacturers' association and the Jobbers' association, by a system of rules and a policy of suspensions and boycotting, have held an iron hand over us to such an extent that the amount of our purchases, the places at which we deal, the rates at which we sell, the discounts we allow, and even the time we sell on are dictated to us. Retail jewellers are forced to buy of the jobbers unless they can make a first purchase of 5,000 dollars net and buy at least 20,000 dollars worth of goods during the year. If they can make such purchases they are regarded as jobbers and can profit by the manufacturers' prices. Otherwise they have to pay jobbers' profits, and jobbers are discountenanced and expelled from the trust if they sell at lower rate of profit than 25 per cent. In short, the whole purpose of the trust is to keep up prices and secure patronage to the members of the trust. In doing this the smaller dealers are frozen out remorselessly.

The Elgin, Springfield, Waltham, Peoria, and Illinois watch companies are thus all banded together, and it is needless to say that it is against the public interest as well as against that of us retailers. Watches constitute no small element of our trade, and when thus the first cost is run up for us it cuts materially into our profits. The vigilance of the two associations is amazing. It scarcely seems possible for a dealer to transgress the slightest rule without detection and summary punishment. Were imported watches bought more the trust would not have such power over us, but as it is its power is almost absolute.

In the matter of silverware, the trust, I think, is not so iniquitous. There are few styles in the market, however, which are not in some way or other covered by monopolies. This is one of the great reasons why novelties in silver come so high. It is one of the latest fads for young ladies to decorate their dresses with all sorts of fancy pieces, the styles of which are constantly changing and the prices of which are consequently far beyond the actual value of the goods. With watches the cases and the movements alike come under the power of the trust, but with silverware it is only the designs that the trust has control of. While I think that watches and silverware are much lower in price than they used to be, I am certain that the minimum price consistent with good workmanship and quality is not yet reached, and that it would be vastly for the benefit of the public, as also for the dealers in jewellery, if some scheme could be devised or law passed by which competition could have its natural influence and we dealers be freed from leading-strings.

The Art of Burglary.

THERE has been a distinct advance of late, says the *Saturday Review*, in the art of burglary, an advance which no lover of progress can have failed to mark as one which, though it confessedly enhances the annoyance inflicted on society by the predatory classes, is in perfect harmony with the spirit of the age. If Jerry Abershaw could return to earth he would be astonished at the change discernible in the higher walks of housebreaking. In some measure, indeed, he might be prepared for it by acquaintance with the mingled daring and courtesy of the better sort of highwaymen in his own day. But, supposing him present in the spirit at the preparation and execution of a first-class jewel robbery in our own times, he would be amazed at the boldness of conception, the strategical ingenuity, the refinement of method, and the breadth of enterprise which distinguish the higher practitioners of burglary in the latter half of the nineteenth century. There were swell cracksmen in his own day, ranking only one degree lower in the hierarchy of social revolt than the gentlemen of the road; but their ideas of association and organisation were still as crude as those of the meanest members of the craft, they contented themselves with the rude appliances handed down to them from the earliest times, and they had a strangely imperfect sense of the value of preliminary inquiry into the field of operation. All that is changed now; and if we, who are accustomed to the genteel ingenuities of a Benson, are surprised when we read of the tripping-line spread over the lawn; the ladders, lightly raised, as if by fairy hands, at dressing-room windows; the unerring fore-knowledge of what is to be got within: the silent, single-stroke promptitude with which it is pounced upon; the dexterity with which the vanishing burglar disappears—if we, who are daily partakers of the spirit of the age, wonder at all this, how amazed would Jerry be if he could return to witness it! And if we look at it in certain lights it is very respectable; it does reflect in a remarkable way the general progress of society; it does elevate the first-class burglar into a position of intellectual esteem which was entirely denied to the members of his calling up to a very recent period.

Applications for Letters Patent.

The following List of Patents has been compiled especially for *The Watchmaker Jeweller and Silversmith*, by Messrs. W. P. Thompson & Boult, Patent Agents of 323, High Holborn, London, W.C.; Newcastle Chambers, Angel Row, Nottingham; and 6, Lord Street, Liverpool.

6,799. E. Herring, London, for "Improvements in time registering machines." Dated April 23, 1889.

6,809. S. Riefler, London, for "Improvements in balance wheel escapements for watches and clocks." (Complete specification). Dated April 23, 1889.

6,871. J. A. Serpin, London, for "A case or chest for silver plate." (Complete specification.) Dated April 24. 1889.

6,882. F. Knowles, a communication from T. C. Sanderson, Portugal, for "Improvements in effecting the separation of gold from antimony." Dated April 24, 1889.

7,053. T. H. Brinton, London, for "Improvements in means and appliances for protecting purses and watches." Dated April 27, 1889.

7,180. C. Morlet and P. Nordmann, London, for "Improvements in repeating attachments to watches." (Complete specification.) Dated April 30, 1889.

7,261. B. H. Joseph and J. Joseph, Birmingham, for "A new means of attaching articles of jewellery and ornaments to the dress." Dated May 1. 1889.

7,281. E. S. Arrighi, London, for "Improvements in time glasses." Dated May 1. 1889.

7,337. J. Jacomin, London, for "Improvements in electric winding and striking clocks." (Complete specification). Dated May 2, 1889.

7,363. W. Parsons, Birmingham, for "Improvements in studs, solitaires, and similar articles." Dated May 3, 1889.

7,436. H. Arthur and T. E. C. Grove, Birmingham, for "Safety and comfort in finger rings." Dated May 4, 1889.

7,489. J. Alcock, Cheadle, for "Improved coil protector for safety and other pins, and attaching thereto brooches, or other articles." Dated May 4, 1889.

7,510. F. L. Turner, Birmingham, for "Improvements in pendants for keyless and other watches." Dated May 4, 1889.

7,563. E. T. Chase, London, for "Improvements in clocks." (Complete specification). Dated May 6, 1889.

7,633. Richard Paulson, Mansfield, for "Improvements in the construction and manufacture of glove and button fasteners, also sleeve links, studs, solitaires, and other articles of jewellery." Dated May 7, 1889.

7,689. J. M. Spink, London, for "Improvements in means or apparatus for indicating standard time." Dated May 8, 1889.

7,703. C. Martin and J. Hickisson, London, for "An improved time recording and registering apparatus." Dated May 8, 1889.

7,707. T. Johnson, London, for "An improved watch protector." Dated May 8, 1889.

7,900. J. Bon, London, for "Improvements in chronometers." Dated May 11, 1889.

8,043. F. L. Garth, London, for "A new or improved bracelet attachment for carrying umbrellas and other portable articles." Dated May 14, 1889.

8,055. H. T. Handley, London, for "Improvements in collar, neck tie, and other dress studs and fasteners." Dated May 14, 1889.

8,116. T. C. Davies, London, for "A fastener for rings and links." Dated May 15, 1889.

8,315. H. H. Lake, a communication from J. Schrieber, Germany, for "Improvements relating to apparatus for use in connection with clocks for displaying advertisements." (Complete specification.) Dated May 18, 1889.

Recent American Patents.

Art of Engraving. W. S. Eaton	402,314
Automatic Musical Instrument. T. A. Macaulay	401,118
Chain. W. C. Edge	401,935
Clock. Arthur Junghans	401,499
Combined Button Hook and Bracelet. Alice Johnstone	401,746
Compensation Watch Balance. A. F. Pickert	402,032
Cutting Off Machine for Jeweller's Stock. F. L. Lewis	402,171
Electro-Therapeutic Spectacles. C. Brust	401,682
Electric Winding for Torsion Pendulum Clocks. H. Rabe	401,065
Electric Self-winding Timepiece. M. Carranza	401,006
Electric Striking and Repeating Clock. A. M. Jansen & V. J. A. M. Jansen	402,329
Engraving Machine. C. H. Field	402,316
Engraving and Chasing Machine. W. W. Bradley	402,135
Finger Ring. Moses Freed	402,011
Finger Shield and Fountain Attachment. J. Patmor	402,185
Fountain Pen Wm. Van Demark	401,985
Fountain Pen. S. D. Dias	402,417
Lace Pin Fastening. M. E. Oppenheimer	401,053
Lobe Earring. J. C. Doran & H. A. Hall	402,071
Machine for Engraving Watch or other Cases. Ami Zuahlen	402,380
Penholder. L. M. Hopkins	401,435
Picking Thimble for Musical Instruments. N. E. Barnes	401,476
Plating Stock for Jewellery. J. S. Palmer	401,900
Repeating Watch. Ch. Morlet	402,343
Separable Button. G. A. Schlechter	401,908
Spectacle or Eye Glass Frame. J. E. Searing	400,956
Spectacle Frame. J. E. Searing	400,957
Stem Winding and Setting Watch. E. Seitz	401,074
Stem Winding and Setting Watch. C. Bohnenstiel	401,815
Stereoscope. H. C. White	401,807
Timepiece Dial. M. V. B. Ethridge	401,697
Tool Handle. G. Carlisle	401,481
Watchmaker's Staking Tool. J. C. Rocheleau	401,759
Watch Pendant. Paul Perret	402,473

A printed copy of the specifications and drawing of any patent in the American list, also of any American patent issued since 1866, will be furnished from this office for 2s. 6d. In ordering, please state the number and date of the patent required, and remit to J. Truslove, Office of *The Watchmaker, Jeweller and Silversmith*, 7, St. Paul's Churchyard, E.C.

Gazette.

PARTNERSHIPS DISSOLVED.

E. & J. Little, Middlesbrough, watchmakers. Wright and Sale, St. Neots, watchmakers. Butler & Moss, Newark-upon-Trent, pawnbrokers. Hunt & Roskell, New Bond Street, goldsmiths. De Grave, Short & Co., St. Martin's-le-Grand, City, scale-makers. Stevens & Sons, Villiers Street, Strand, and Clapham Junction, ivory turners. Oxspring, Nixon & Co., Sheffield, steel manufacturers.

THE BANKRUPTCY ACT, 1883.

RECEIVING ORDERS.

To surrender in the Country.—Carr, Jno. William, Lowestoft, pawnbroker. Bourne, James, (trading as William Bourne), Manchester, metal-agent. Pilcher, William Garibaldi, Southsea, watchmaker. Turner, John Barnard, Poole, watchmaker.

ADJUDICATIONS.

J. W. Carr, Lowestoft, pawnbroker. W. G. Pilcher, Southsea, watchmaker.

The Deeds of Arrangement Act, 1887.

Berks.

Lay. Arthur Edward, The Market Place, Wantage. watchmaker, jeweller, silversmith, &c. Trustee, George G. Poppleton, Temple Row. Birmingham. C.A. Unsecured Liabilities, £1321 7s. 6d. Estimated Net Assets, £673 14s. 2d. Creditors fully secured. £25 12s. 6d. Composition. 7s. in the £ in three months and 7 days from date of registration of deed secured, and assignment of debtor's estate to sureties. Deed of Composition dated May 11, 1889; filed. May 14. 1889.

Durham.

Mitchell, John Edwin. 33, Tatham Street, Sunderland, watchmaker. Trustee, G. A. Lawrence. West Sunniside, Sunderland, accountant. Unsecured Liabilities. £99 10s. 5d. Estimated Net Assets, £25. Deed of Composition dated, May 21. 1889; filed, May 25, 1889.

Middlesex.

Tagg. Henry, 70. Hatton Garden, and 109. Tufnell Park Road, Holloway. jeweller. Trustees, J. Forrester, 1, Summerhill Terrace. button manufacturer, and another. Unsecured Liabilities, £1,471 14s. 5d. Estimated Net Assets. £789 15s. 7d. Creditors fully secured, £500. Deed of Composition dated May 6, 1889; filed May 13. 1889.

Northumberland.

Struthers, James Hamilton. 81, Westgate Road and 39, Rye Hill. Newcastle-on-Tyne, watchmaker. Inspectors, J. L. Mott. Hockley Hill, Birmingham, jeweller, and another. Unsecured Liabilities. £494 1s. 6d. Estimated Net Assets, £211 13s. 7d Deed of Inspectorship and Letter of License with a view to pay a composition of 7s. in the £ by four equal instalments, in 3, 6, 9 and 12 months from date of Deed. Deed of Composition dated May 11, 1889; filed May 15. 1889.

Somerset.

Lobb, Benjamin Nicholson, 7, Queen's Road, Clifton. and 7, Collingwood Road, Redland, Bristol, optician. Trustee. W. H. Parsons. Nicholas Street, Bristol, accountant. Unsecured Liabilities, £339 14s. 11d. Estimated Net Assets, £299 2s. 4d. Deed of Composition dated April 25, 1889; filed May 1, 1889.

Worcester.

Hunt, George Henry, 20, High Street. Worcester. watchmaker and jeweller. Trustee, Thomas J. Cross, Angel Street, Worcester, accountant. Unsecured Liabilities, £1455 10s. 9d. Estimated Net Assets, £350. Creditors fully secured, £326 15s. Deed of Composition dated, May 17, 1889; filed, May 23, 1889.

BANKRUPTCY.

Re Henry Foster, watchmaker.—A meeting of the creditors of this debtor, of High Street, Ashford, was held at the Saracen's Head Hotel, last month. The gross liabilities of the debtor amounted to £452 14s. 11d. and the gross estimate of his assets is £369 16s. 4d., leaving a deficiency of £82 18s. 7d. Included in the assets is a patent for a safety bottle opener, estimated at £100, and 600 rose trees, estimated at £30. In addition, he states he is the owner of a new variety of rose, which will be a valuable asset if the "sport," as it is termed, remains true. The debtor says that, through the falling off of his business on account of the agricultural depression, he is unable to meet his liabilities. For two years or more each market day, he has had on an average a dozen persons in his shop wanting to sell watches or jewellery bought by them in better days, instead of them coming in to buy of him. The proceedings were adjourned to the public examination at Canterbury, to give the debtor an opportunity of obtaining the assistance of a friend or friends, if possible.

Re Elijah Allsop, watch and clock maker, Derby Road, Nottingham.—The debtor applied last month for his discharge. His Honor said he had kept no books of account, and had contracted debts after he knew he was insolvent. The application was opposed, and the debtor's certificate of discharge was suspended for eighteen months.

Re George Henry Best.—This debtor, a jeweller and watchmaker, carrying on business at 27, Talbot Street, Cardiff, was examined last month before Mr. Registrar Langley. He had previously failed in 1885, and obtained his discharge. His deficiency now was £178. He attributed his failure to speculating in Allsopp's shares, by which he had lost £180. The shares of other great breweries had gone very well, but so far as he was concerned at least, Allsopp's was a failure. The examination was closed.

Re Judah Isaac Tumpowsky, jeweller and outfitter, late of Pontlottyn, but now of 26, Broadway, Cardiff, came up in the Cardiff Bankruptcy Court last month for his public examination. The debtor's statement of affairs showed that there was a deficiency of £1,136. In reply to the Official Receiver, the debtor stated that he originally started in business at Rhymney in 1884: then he went to Pontlottyn, and in November or December, 1888. he came to Cardiff. He attributed his failure to his wife's illness, and to the persecution of other pawnbrokers. He borrowed money when he started, and subsequently. He had been helped all through until he came to Cardiff. The examination was closed.

Correspondence.

All Letters for Publication to be addressed to the Editor *of* The Watchmaker, Jeweller and Silversmith, 7, *St. Paul's Churchyard, E.C.*

All communications must bear the name and address of the sender, not necessarily for publication, but as a guarantee of good faith.

To the Editor of *The Watchmaker, Jeweller and Silversmith.*

PRACTICAL HINTS ON OPTICS FOR SKILLED OPTICIANS.

Sir,—I notice that in the March and April numbers you had articles headed Practical Hints as above, which will doubtless be very interesting for ophthalmagists, although there is nothing new in the describing of the treatment of muscular astagnopia (being well known here). But what I should like to have seen in your wide-spread journal is, Elementary Articles on Science of Optics; The Error of Refraction of the Eye; and the mode of Diagnosing of the requirement of Spectacles; which would give the watchmaker-optician an insight of the business. In round figures I should say that in the United Kingdom there are 10,000 spectacle sellers or more (I will not call them "opticians" but merely "spectacle sellers"), and I may add that I should not be wrong in saying that 95 per cent. of them have not the slightest idea how to suit and fit spectacles, and the optical business by them is carried on in the most slip-shod sort of fashion. The old and young, big and the small, are all served with one kind of frame and only two sights, viz.—concave and convex (they trouble little about cylinders, compound sphero-cylinders, prisms, &c., or any complicated lens whatever), and invariably have to be changed again and again, and yet not suited, they choose for themselves, and take, if allowed, stronger than ought to, and hence the mischief.

Does the spectacle seller trouble or take pains to ascertain whether each eye has different visions? and does he test the angle of convergence, or know what the patient has seen, or what he ought to see, such as the far or near point? or enquire whether the patient is astigmatic, or whether hypermetropic, myopic, presbyopic, or asthenopic, or does he try to find a pair of spectacles properly centred, or does he have a pair made to ride on the nose, and have the right shaped lens? Naturally a watchmaker would answer: It would hardly be worth his while to go into all the details for the sake of 1s. or 2s. 6d. Allow me to explain that in my business I make a practice to charge from 10s. 6d. to 21s. a pair for spectacles made to order, and I readily get it. I test the sight as carefully as any oculist (of course I have a special method of doing it), and have them made to fit, and guarantee favourable results, and with all this, I do not change lenses one in twenty, for the simple reason that a little extra painstaking is taken at first, and I now do a very large business in it.

My object in writing this, is to point out to those so-styled opticians, that if they will persevere, and follow up the business, they will raise the optical business above the usual tinkering, and get for themselves fame and excellent remuneration.

In conclusion, I would add that all opticians should master the three primary things, *i.e.*, to know how to test the sight, and when tested, to estimate the error of the refraction, and finally, give such glasses as will suit and correct the error.

I therefore explain this, and trust I have not encroached too much on your valuable space. Through the medium of your paper, some of the skilled opticians may easily contribute periodically some hints on elementary optics.

I remain, yours faithfully,

42, North End, Croydon. Louis Courlander.

Pale Gilding.—J.R.P.—The gilding is pale for one of the following reasons:—1.—The solution is too poor; 2.—The battery power is insufficient; 3.—The temperature is too low.

[Ed.

"A Reader of your Paper."—Will "A Reader" kindly send his name and address? We should be glad to communicate with him.—[Ed.

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